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THE MONTH

Dr. Lush has again introduced into Parliament a Medical Acts Amendment Act. This provides a penalty of 20*l.* for all unregistered persons using any title purporting to authorise the practice of medicine or surgery, or signing certificates of death. It also empowers the General Medical Council to register foreign qualifications. Sir John Lubbock introduced a bill on January 31 to protect all the titles ordinarily assumed by dentists, and to provide for their registration. The bill requires all who aspire to be dentists, and who are not practising before August, 1879, to pass an examination.

The correspondence between the solicitors of the Pharmaceutical and the Apothecaries Societies on the subject of the Counter Practice trial has been published. According to this, the Apothecaries Society never have *sanctioned*, and do not intend to sanction, the institution of proceedings for mere counter practice, though they are not disposed to abandon their claim to prohibit that by their Act. It cannot be too clearly stated that the trade is defending counter practice, and nothing else.

An extraordinary proportion of failures at the last Preliminary Examination has directed prominent attention to the education of apprentices. Some members of the Pharmaceutical Council want to pass a law prohibiting the engagement of apprentices from "the lower social strata." These advocates of aristocratic pharmacy were reminded by Mr. Hills that a young man could make himself a gentleman, and might be president of the Pharmaceutical Society, no matter from what origin he sprang; while Mr. Greenish appropriately pointed out that the fact of so many more failures occurring in arithmetic than in Latin did not support the theory of the low stratum.

The Board of Trade wishes to consolidate the laws referring to weights and measures, and asks the Pharmaceutical Council if there is any reason why the old apothecaries weights should not be abolished. The Council objects, the only given reason being that if quinine, for example, should be afterwards sold by the drachm, it would not be legally possible to sue for the value! As if it would not be possible to charge for 60 grains. And yet some of these very gentlemen will go to scientific meetings, and complain of the stupidity of people who offer resistance to the introduction of the metric system.

Mr. Dupré, as President of the Society of Public Analysts, gave an annual address on the 16th ult., in which of course the Inland Revenue chemists, and their processes, were snapped at in the usual manner. Mr. Dupré thinks there is one point on which analysts err, but even that seems to be occasioned by an excess of lovingkindness on their part. He urges that no public analyst should appear as a witness for the defence in a case where the certificate of another public analyst is in question! Could anything better illustrate the animus against traders which we have so often had to comment upon?

The Irish Pharmaceutical Council being asked to vote 25*l.* towards the expense of providing for the Pharmaceutical Conference in Dublin next August, some of its members very rightly questioned the legality of thus spending the funds. Although the members of the Council were equally divided on the point, the motion was withdrawn. The Irish pharmacists are making great efforts to render the meeting in their capital a success.

Some serious failures in the New York drug trade have been announced in consequence of the fall of a prominent drug broker. We especially regret to observe the suspension of Messrs. John F. Henry, Curran and Co., the leading patent medicine dealers in the States, who had a considerable connection in this country. We have reason to hope that, in their case at all events, the embarrassment will be only temporary.

The extraordinary length to which the system of bribing physicians has been carried on in Montreal is graphically described in a letter by Mr. Gardner, a druggist of that city, which we reprint from a Canadian newspaper. If Mr. Gardner's statements are accurate, they cannot be made too public, and we hope some Canadian pharmaceutical editor will risk an action for libel in the effort to expose the parties to the disgraceful system.

The Institute of Chemistry has come fully before the community, and has published its rules and objects. It commences its career under excellent auspices, most of the weightiest names in the British chemical world being included on its roll. Membership of the Institute is intended to imply both reliability and skill.

A new Executive Committee of the Trade Association is to be elected on April 1. The system adopted is novel. Each member will vote for any chemist he pleases resident in his own electoral district, and the general committee thus chosen will elect from itself the executive for the ensuing year.

The Court of Appeal has decided that Lamplough's Pyretic Saline is not chargeable with medicine stamp duty. We print a special report of Lord Justice Bramwell's judgment, which is of great importance and interest.

The London Chemists' Assistants Association have arranged to hold a soirée at the Quebec Institute in Baker Street on the evening of February 27. Tea and telephones will be provided. A limited number of tickets will be given away. An advertisement gives fuller particulars.

Pharmacalia.

Those who are curious about old pharmacy would do well to consult the pages of a once celebrated book called "Gray's Supplement to the Pharmacopœia." More accurate formulæ have replaced many of its antique recipes; but yet an impartial reader will be astonished to find even in its earliest editions the germ of that order and conciseness which characterise the modern treatise. A few London pharmacies retained up to a recent date some of those very preparations which our students would be inclined to attribute to the middle ages.

Sponge tents (Turundæ intumescentes) are not, we believe, altogether discontinued. They are simply selected pieces of sponge, steeped in melted wax; squeezed in the hydraulic press while warm, and cut into shapes when cold.

Glob. Gascoigne and glob. Kent we have ourselves sold, as well as glob. contraerva; and this form of elegant pharmacy was in vogue until the compound powders of the "Pharmacopœia," first known under the name of Species, changed the public taste.

We may perhaps mention that the gilded balls, now one of the symbols of dispensing pharmacy, were not originally sham ornaments. They were mostly, if not all, compound chalk powders, with red coral and prepared pearls, the latter being the margaritæ preparatæ, at 3*s.* the ounce. The active ingredient gave the title to the preparation, except in the case of the globuli Gascoigne and Lady Kent, each of which contained one-twelfth of Oriental bezoar. These two maintained a singularly capricious price; Lady Kent's globuli commanded, according to Gray, 9*s.* 4*d.* an ounce; Gascoigne's globuli, one-third. The learned pharmacologist trusted too much to hearsay and too little to personal inspection. From his formula the price should obviously have been identical, but the slightest examination would have proved that the glob. Kent were saturated with musk and ambregris. Glob. Gascoigne had no scent whatever.

We may pass over the vipers which "were made into a restorative decoction, and which in England have given way to turtle soup," and likewise "the cobweb which was used in quartan ague—dose, ten grains," together with the caution that the cobwebs of the different kind of spiders appear, however, to differ in their effects;" but we assure the reader that we have sold the latter, and that we kept a large assortment of the former in the moist condition. Gray gives the retail price of vipers dried 1*s.* per ounce, ground and made into lozenges, 7*s.* 6*d.*

Prices are always a matter of interest to the pharmacist. Otto or attar is quoted at from 2*l.* to 3*l.* the ounce; sulphate of quinine, 3*l.* the ounce; subcarbonate of soda, 3*s.* 6*d.* per lb.; bicarbonate of soda, 7*s.* per lb.; Rochelle salt was 5*s.* per lb.; rheum palmatum (Turkey or Russian) rhubarb, 24*s.* per lb.; East Indian being 8*s.* 6*d.*, and British rhubarb 3*s.* 6*d.* Oriental bezoar maintained its value of 2*l.* 4*s.* per ounce troy. In all these books on general pharmacy which preceded the introduction of applied chemistry and systematic research there is a mass of heterogeneous material, often fanciful and occasionally grotesque; but we would vindicate Samuel Frederic Gray, lecturer on the Materia Medica, from the charge of being the mere compiler of miscellaneous recipes. His work does not contain one-half of the trivialities of the old Paris Codex. His preface may be consulted with advantage. In it he describes the various pharmacopœias dating from the first one in May, 1618, which was originally distributed amongst the apothecaries by the London College of Physicians. This work was so full of errors that it was obliged to be called in immediately, the whole impression cancelled, and a new edition published in December following.

Culpepper was the first man who ventured to translate its Latin directions into the vulgar tongue, and in consequence drew down upon himself the vengeance of the College, who refused him the licence to practise. The grievances of the apothecaries are descanted upon at length, and there are some strange strictures upon the question of examinations. It is contended that the examination of an apprentice "is a novel measure and useless, since he has the stimulus of profit to lead him to perfect himself in his art."

In our day the process is reversed, and it is the teacher who feels the refreshing influence of this stimulus. Gray also considers it an open question whether, in case of the rejection of a candidate, damages might not be recovered of the master "for deficient instruction in art."

It is remarkable how long prejudice with regard to ancient custom will hinder progress. Gray laments the attempted introduction of a decimal system of weights in France. Before the Revolution, he observes, there was only one pile of weights in common use; in endeavouring to introduce one upon philosophical principles there were no less than four; and the Revolutionists, misled by the apparent facility of a decimal scale, introduced the metrical system in 1795.

Before the Supplement is dismissed, let us gather up a few miscellanea.

O O O is the old sign for oleum olivæ optimum; and G G G the sign for gummi guttæ Gambiæ-gamboge. Ne tr. s. num. means nett cash, ne tradas sine nummo.

Our term vina includes the "impregnated wines" of old pharmacy, just as aceta were called "impregnated vinegars." The P. L. 1745 was the only one that determined the exact sorts the College wished to have employed; but in 1809 sherry was alone official. In this respect English is distinct from foreign pharmacy. Gypsum is indicated to clear cloudy wines, as also sugar of lead with sal enixum; and, as the lead is changed into an insoluble sulphate, the practice is said not to be so dangerous "as has been represented by those afflicted with the poison mania."

Piquette was a very weak wine, made by pouring water upon the cake of grapes, and allowed to ferment. Distilled water often received the name of Holy water, being used as a diet drink, and in the religious services of the Romish Church. The double flowers of the wild pomegranate were then, as now, called Balaustiæ, which must serve as an answer to a question put this month by a correspondent. Hing, for asafœtida, a word which has received modern comment, was an old name for asafœtida.

The Lesser Galangal is given as of doubtful origin, a point which has been cleared up by a distinguished pharmacologist. In India it commanded three times the price of the *Galanga major.* Proof spirit was made with equal parts of water and spiritus rectificatus. Lycopodium was found to repel water strongly, and hence was used by the sempstress to cool the heated hand. It enjoyed a great sale up to ten years back, being also in constant requisition for stage lightning. A caution is offered as to the use of digitalis, because it accumulates in the system, "and the practitioner may be surprised at the sudden demise of his patient," even after the use of it has been abandoned. Tasteless ague drops, containing one grain of white of arsenic in one ounce of water, were used in the fen countries, where a strange fatality existed among the wives of the farmers, who grew rich by frequent marriages. Let us in charity suppose that a damp locality had its share in the transaction. Well had it been for the dames removed thus early had they known how to select the sacred mistletoe, the *Viscum quercinum,* not its substitute, the *Viscum album*—for the plant reverenced by the Druids had, according to Samuel Frederic Gray, the treble virtue of being an effectual purgative, used to deck our churches, and to preserve the house from evil spirits.

The past month of January has been saddened by the removal by death of two distinguished men. We were about to call them Frenchmen, but there is no nationality in science.

M. Henri Victor Regnault, celebrated physicist and chemist, died at Auteuil on January 19, the anniversary of the Battle of Buzenval, at which his son fell mortally wounded. M. Regnault, who was sixty-eight years old, was Chief Director of Mines, successively Professor of Physics at the Collège de France and of Chemistry at the École Polytechnique. He was a member of the Académie des Sciences, and director of the manufactory at Sèvres. M. Antoine César Becquerel attained the fine old age of ninety, and received a medal in 1874 from the Académie, in commemotion of a fifty years' membership. He was Professor of Physics at the Jardin des Plantes, and devoted to electro-chemical research. He was awarded the Copley medal in 1837.

Also has passed away, rich in years and fame, but not in money, the veteran George Cruikshank. Nowhere will his striking physiognomy be missed more than at the annual conversazione of the Pharmaceutical Society. From motives of private friendship he frequented these social gatherings in a most assiduous manner; and we believe that an unrivalled collection of his works is in the possession of a pharmacist.

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Mr. W. Kemp has contributed an excellent article to one of the gardening magazines on the art of raising cheap stately plants from seed. The information will be especially valuable this month; and the writer has shown that for very little money some fine ornamental specimens may be introduced. Planted in moderate numbers and judiciously arranged, striking effects may be produced. Many broad leaved, tall plants, conspicuous for the beauty of their general appearance, may be raised with the aid of a hot bed, in which to start the seed and a frame in which to harden the seedling. Stocks may thus be raised with moderate attention, and some may be propagated without the aid of glass. Two drawings are given in proof of the assertion, the first being the *Heracleum giganteum*, and the second the *Justicia speciosa*. The Acanthus, the Cannas, and the Cardoons will suggest themselves as noble types of beauty; fortunately their cultivation is within the limits of the strictest economy. The writer includes in his description a few medicinal plants which will be familiar. The *Eucalyptus globulus* attains a height of from six to ten feet during the season, while the *Nicotiana* recommends itself by the facility with which it can be raised and its handsome foliage. The *Nicotiana grandiflora purpurea* and *Nicotiana macrophylla gigantea* being among the best varieties.

Often we have had the pleasure of seeing the medicinal *Ricinus*, a most lovely plant, as a decoration in a crowded room, where its cool green foliage was in contrast with the glare of gas-light. It is far more attractive in its natural habitat, the garden; can be raised easily, and attains to large dimensions (six to eight feet high). All it wants is a friable and rather rich soil. *Ricinus Africanus*, with green foliage; and *Ricinus sanguineus* tricolour, with deep-red leaves and stems, are recommended. The *Daturas* may well come in for a word of praise, and the list is by no means exhausted. It is important in case of these rapid growers not to draw them up too quickly in the hot-house under glass. To change the subject, there is no much finer sight than that presented by a field of domestic well-grown rhubarb, when the green colour merges into purple, and the sun shines upon it. As garden plants, both the *Rheum officinale* and *Rheum palmatum* are regal in their beauty.

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In these days of centennial commemoration it must not be forgotten here that on Thursday, January 10, a hundred years had elapsed since the death of Carl von Linné, commonly called Linnæus. It is a curious fact that while many other arts and sciences, medical or otherwise, owe both their origin and growth to a large number of workers, so that it is often difficult to name a special founder, the history of the rise of botany as an exact study is remarkably centred in one individual. Linnæus, we need hardly say, was born in Sweden, and his compatriots in Upsala and Stockholm have united to do honour to the memory of the "Flower King." His father, a good Protestant minister, was himself a collector of curious plants, and need not therefore have shown mortification that his son neglected studies which might have fitted him for the church, and turned his exclusive attention to one page of the book of nature. A Dr. Rothman rescued Linnæus from uncongenial pursuits, instructed the youth in physiology, and introduced him to Tournefort's botanical system. Subsequently he repaired to the University of Upsala, where his pecuniary circumstances were in a most embarrassing condition—they would have proved desperate but romance came to his aid. Walking one autumn afternoon in the University garden he met an aged clergyman, Dr. Olaf Celsius. The result of their conversation was that the doctor received Linnæus into his own house, set him to work on the plants mentioned in the Bible, and employed him in other botanical research. It will be recollected that the rise of the late Sir Joseph Paxton turned upon a similar circumstance—a chance meeting in a garden between himself and the Duke of Devonshire. Linnæus was for a brief space of time in clover, enjoying the friendship of his partner and the use of an excellent library. He became deputy professor at the University, and in 1731 the Royal Academy of Sciences at Upsala sent him to explore the natural productions of Lapland. An old engraving represents Linnæus in his Lapland dress. He set out on horseback, with the scantiest equipment, but with the advantages of robust health and undaunted courage. In this desolate region he escaped destruction threatened by a fire. A forest near the Gulf of Bothnia was set in a blaze by lightning. The wind fanned the flames, and the smoke was suffocating. The noise made by the conflagration was described like that made by an advancing army. The huge trunk of a tree, falling between Linnæus and his guide, was within a few inches of ending the career of both. On the approach of winter he returned to Upsala and published the "Flora Lapponica." But poverty once more invaded him. Being, through jealousy, forbidden to lecture at the University, he taught assaying to the copper miners, and with the small sum of money thus obtained he resolved to travel; went to Holland and took the degree of M.D. at the small University of Harderwych. Here he gained the friendship of Boërhaave, who wished him to stay in Holland; but love, in the person of a physician's daughter, whispered Sweden. Another romantic episode, however, delayed his domestic happiness. Passing through Amsterdam on his way home, he met the chief burgomaster Clifford, who had a splendid country-seat and garden near Haarlem. Under his patronage Linnæus went to Leyden and there produced some manuscript pages of his "Systema Naturæ." The Dutch were enchanted with his revelations, which were a marvellous advance in the reign of order. The publication of his views gained for him an immediate reputation, and placed him indeed on equal terms with Boërhaave. Linnæus was the only person whom the dying physician admitted as a visitor when on his death-bed. "I have lived," said Boërhaave, "my time out, and my days are at an end. I have done everything that was in my power. May God protect thee! What the world required of me it has got; but from thee it expects much more. Farewell, my dear Linnæus." Clifford now extended to him a patronage which has been called magnificent. At his house he worked laboriously, and from hence he was sent over to England in the summer of 1736 with an introduction to Sir Hans Sloane, who subsequently founded the British Museum. The meeting between himself and our countryman was not cordial, nor did he meet with a much warmer reception from Miller, the curator of the Botanic Garden at Chelsea. From London, Linnæus went to Oxford to visit the gardens of a famous botanist, John Jacob Dillenius, who was, as his name indicates, an exile. This latter made the contemptuous observation—"See, this is the young fellow who is bringing confusion into the whole of botany." It turned out that the proof sheets of the yet unpublished "Genera Plantarum" had been forwarded to Dillenius, who regarded the book as a catalogue of errors. "I think," said Linnæus, "that there are no errors, but, if so, would you point them out?" A long discussion ensued, and on all disputed points Linnæus was victorious. A perfect understanding took place, and he was urged to share the Oxford chair of botany. Returning to Holland, Linnæus fell ill, and on his recovery went to Paris, where he was welcomed by the Jussieus, and was elected corresponding member of the French Academy of Science. He now had the wisdom to get married, and settled at Stockholm as a physician, where he was sadly vexed by his associates, in spite of whose opposition he was employed by the Queen of Sweden, and founded an academy at Stockholm of which he was elected president.

The great object of his ambition was attained when in 1741 he received the botanical professorship at Upsala. The academical garden was laid out according to his heart's desire. In six years he had added eleven hundred exotic plants to the original fifty—besides the vegetable productions of Sweden—and issued a catalogue of the whole. Specimens poured in at his request from every available quarter—from Russia, Norway, Denmark, Holland, Germany, Switzerland, America, and Great Britain. Now commenced his botanical excursions, which have acquired historical celebrity. Accompanied by his 200 students he went out in quest of flowers, and when a rare or new plant was found, a horn was blown, and the whole company gathered round their leader, who discoursed upon the acquisition.

Linnæus now published his "Amœnitates Academicæ," "Philosophia Botanica," and "Species Plantarum" in succession. The second contains the foundation of what is called his system—in the third, he first used trivial words to designate specific names. Honours rapidly succeeded. He became Fellow of the Royal Society of London: his own sovereign, Gustavus III., created him a Knight of the Polar Star. Paris, St. Petersburg, and Berlin enrolled him as a member of their academies; and the King of Spain tempted him in vain with a refreshing annuity and a title of nobility to settle at Madrid. Further in his personal career we need not follow him—his fame and the spread of his doctrines—his strong religious tendencies as well as his literary feuds are matter of history. As a botanist his merits were transcendant, and we may agree with the summary of Cuvier that the Linnæan School is more fitted to arrange and describe the materials of science than to extend its boundaries. Yet our larger knowledge has been based upon his admirable and systematic classification.

In 1783 James Edward Smith, then a young medical student, bought the books and collections of Linnæus, father and son, much to the discomfiture of the Swedes, who have ever since regretted their departure. In consequence of his spirited conduct, he was elected a Fellow of the Royal Society. These collections led to the establishment of the Linnean Society, which was started by Smith (afterwards Sir James), Sir Joseph Banks, Dr. Goodenough, and others. Its first meeting was held on February 26, 1788. All our eminent naturalists joined in the undertaking, and foreigners of distinction were soon added to the long list of names. The books and collections arrived in twenty-six large chests, and formed the commencement of the library and museum, now clothed in purple and fine linen, at Burlington House. The original price given was 1,029*l.*, and Sir James directed in his will that they should be offered to the society, who became their proprietors for the sum of three thousand guineas.

The history of the Society has been one of almost unbroken quiet prosperity; sometimes disturbed by a passing cloud, but usually keeping the even tenour of its way. Time was when its deliberations were held in a remarkably stuffy room—far too small for the purpose—while the chemists met on the ground-floor in an apartment which was, if possible, more stuffy. The twin sciences were then distinguished by the several members, as Stinks or Plants. Now both societies assembled in somewhat palatial residences, the library accommodations in either case being perfect. Nothing is more gratifying than from year to year to read over the names of the members of the British Pharmaceutical Conference, and to see that annually the numbers are increased of those amongst ourselves who have a right to share the advantages, social and scientific, which both these societies afford. Specially we would direct attention to the infinite amount of pleasure to be gained from the discussions of our great botanists and naturalists; and not less to be derived from the after conversational meetings which ensue, when friendship is wont to go hand-in-hand with science.

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Mr. C. H. Wood has read a paper before the Pharmaceutical Society, on the progress of Cinchona cultivation, and Alkaloid production in Bengal. After sketching the attempt already made under the direction of Dr. Anderson and Mr. McIvor, he stated that at present there were growing 3,000,000 cinchona trees covering an area of 1,900 acres. Of the several species, C. Pahudiana, turned out worthless: C. officinalis thrived with difficulty: C. Pitayensis failed: C. Micrantha was rich only in Cinchonine: C. Calisaya, though rich in quinine, grows under limited conditions, and runs into varieties of unequal value. On the other hand, Cinchona Succirubra has been most signally successful. Great efforts had been made to extend the propagation of good calisayas, and ultimately the desired object might be gained; but the succirubra promised immediate results. Of these, 2,500,000 were not growing, and if all the trees were regularly cut at the completion of their seventh or eighth year, an annual crop of 366,000 lbs. of bark might be furnished.

Experience would demonstrate the best mode of harvesting. The proportion of total alkaloid was found to be greatest in the bark of the root, and diminished as they went up the stem to the branches. The composition also of the total alkaloid varied appreciably, according to the part of the tree from which the bark was taken.

The plantations were now capable of yielding annually 366,000 lbs. of dry succirubra bark, containing an average of 4 per cent. of total alkaloid. Mr. Wood then passed to the consideration of a question which is of the highest pharmaceutical interest, namely, the determination of the best and most economical form of the febrifuge to be obtained. An aggregate of alkaloids was obviously the product likely to be generally useful. It was discovered that by applying an entirely novel mode of procedure, more convenient physical properties could be given to the product at a less manufacturing cost. The dry bark was exhausted by successive treatment with dilute hydrochloric acid, the resulting liquor being precipitated with an excess of caustic soda. The precipitated alkaloids were collected on filters, washed, dried, and powdered. The precipitate was then dissolved in a quantity of acid, just sufficient to take up the alkaloids, filtered from insoluble colouring matter, and the solution again precipitated. After washing, drying, and grinding, a fine white powder was obtained, which becomes slightly buff on keeping. This preparation never agglutinated, was freely soluble in weak acids, and readily taken up in lemon juice. It went by the name of Cinchona Febrifuge, and possessed nearly to the same extent the anteperiodic properties of quinine, and might be safely substituted for the latter.

Attempts were being made to perfect both its preparation and method of administration. Already 5,000 lbs. have been made and issued, and it is now being manufactured at the rate of 4,000 lbs. a year. Present cost price, 1*s.* 9*d.* per ounce.

Pure quinine was undoubtedly the best known and most trustworthy specific, but it was simply unattainable in quantities sufficient to alleviate a tithe of the suffering that results from fever in India. Quinine, says Dr. King, is a costly drug, quite beyond the means of a large proportion of the population. Again, it is no exaggeration whatever to say that to three-fourths of the population of India quinine is simply unattainable even by purchase. A strong case may, therefore, be allowed to have been made out in favour of the Cinchona Febrifuge; it has received the approbation and direct countenance of the profession as a supplement to, not a substitute for, quinine.

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Lastly, we have to direct attention to a very unhappy dog whose life is made a burden by reason of original research. Every apprentice is made aware at an early stage of his education that carbonic acid is heavier than atmospheric air, and he is directed to ascertain its presence by pouring it from one vessel into a second wetted with aqua calcis. The tyro knows, moreover, that there is a certain Grotta del Cane, close by Naples, where this gas exists in quantity, and under unusual conditions. Mr. T. Graham Young, being in the neighbourhood of the grotto, paid it a visit, with the double view of personal inspection, and of examining the statements made respecting it by E. A. Finot. The latter chemist said that the residual mixture of nitrogen and oxygen, after absorption of the carbonic acid, contained a larger proportion of oxygen than common air: hence Mr. Young procured samples of the gas in sealed tubes. The temperature of the air above the layer of gas was found very different from that of the gas itself, and the gaseous layer was completely saturated with aqueous vapour. Analysing the gas, the following strange want in unanimity of result was gained:—

Mr. Young detected no excess of oxygen, but the amount usual in common air, viz., from 20·25 to 20. Finot gave 27·74 to 27·10 in his residual air. The whole results are so curiously discrepant that we quote the figures, wishing as pharmacists to have further light.

T. Graham Young:—

			Residual Air.	
CO_2	61·50	71·00		
O	7·80	5·80	20·25	20·00
N	30·70	23·20	79·75	80·00
	100·00	100·00	100·00	100·00

E. A. Finot:—

			Residual Air.	
CO_2	25·38	25·69		
O	18·46	20·13	24·74	27·10
N	56·16	54·18	75·26	72·90
	100·00	100·00	100·00	100·00

Now let us try the cave. "The floor inclines downwards, and likewise the roof, so that after proceeding about five yards, the gas is level with the roof, which prevents further ingress." The smoke from a lighted torch gradually falls upon the surface of the layer of gas, which seems covered with beautiful undulations. An intolerably prickling sensation is felt in the eyes by the action of the carbonic acid. Now the poor dog begins its melancholy experiment. It appears to drink the gas, lapping with its tongue, its eyes dilate and the lapping becomes more spasmodic. Whilst in the cave the dog could stand, but when carried and set on its feet outside it fell and lay struggling as if in paroxysms of suffocation. In a few minutes it recovered. The same animal has to go through the same performance whenever another scientific visitor wants to know that carbonic acid gas is not adapted to inflate balloons. We are informed that the dog gets in such a nervous state with the prospect of its frequent ordeals that it has to be killed in three months. Should any pharmacist imagine that we have worked out a sensational description let him turn to the last number of the *Chemical Journal*, and read the details for himself.

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The complaint sometimes urged against the unpractical character of the pursuit of abstract science must now certainly be abandoned. From it alone some of the most utilitarian, as well as splendid results have been derived. The presidential address by Dr. Siemens, before the Society of Telegraph Engineers, is a narrative of the application of philosophy to the daily life of man. He shows how the speculations and experiments of Franklin, Galvani, Volta, Oersted, Ampère, and Faraday, have been turned to account. We prefer, however, to illustrate the matter from the letter of a correspondent who has described the preparations for the illumination of the Exposition Universelle. On the bridge of La Concorde they have fitted up an apparatus of great power for the electric light. It will be reflected as far as the façade of the palace of the Trocadéro, and illuminate the whole of the Seine below the bridge. For this purpose they have constructed on the abutments, and on the intermediate pilasters, huge frames, double the height of the gas lamps, on which the lanterns are fixed. At the same time, no less than seventy-two additional gas lamps will be constructed to help out any deficiency the electric light may exhibit. We express the hope that the *éclairage* may delight the gaze of a large number of English pharmacists.

The Pharmaceutical Council.

THE Council met on February 6, Messrs. Atherton, Brown, and Mackay being absent.

AN INDEPENDENT REPORTER WANTED.

Mr. Hampson raised a question about the interpolation of a paragraph in the report of the last Council meeting respecting the discussion between the solicitors of the Pharmaceutical and Apothecaries Societies. That subject had been discussed in committee, and in the regular order of things would not be reported.

The President said he alone was responsible for the paragraph. The reporter's notes contained no reference to the most important subject of the last month's considerations, and he (the President) thought it outrageous to send out a professed report of the meeting with all allusion to that subject omitted.

Mr. Hampson said his objection was to the correction of the report by any person.

The President objected to be referred to as "any person" in his official capacity.

Mr. Hampson said there had been an understanding that for the present no report of the affair should appear.

Several other members spoke in support of the President's action, and no one supported Mr. Hampson.

The latter explained that he had no personal feeling in the matter. He wished to see the best possible report of the proceedings, but he thought that ought to come from the reporter and not from the President.

THE NEXT ELECTION OF COUNCIL.

The lot being taken in the usual manner for the seven members of the Council who should retire in May next, the following names were drawn:—

Atherton
Betty
Brown
Gostling
Greenish
Hampson
Williams.

The following who remained in by lot last year now retire by rotation:—

Atkins
Hills
Mackay
Owen
Sandford
Savage
Schacht.

The following remain in office for another year:—

Bottle
Churchill
Cracknell.
Hanbury
Rimmington
Robbins
Shaw

Membership and Examination.

The Registrar's reports were presented. These showed that while the number of apprentices connected with the society had increased during 1877 by 120, associates not in business by 18, associates in business by 108; the total number of members had decreased by 37. The register of pharmaceutical chemists, and chemists and druggists, showed an increase of 142, the total number of persons registered being now 13,320, of which 2,307 were pharmaceutical chemists. An analysis of the examinations for the year 1877 was also presented. These (printed elsewhere) showed some remarkable results, especially in respect to the discrepancy between the English and Scotch results. In the Minor and Major examinations the proportion of rejections was nearly twice as great in London as compared with Edinburgh. The figures were commented on by Messrs. Greenish, Hampson, and Bottle. A deputation, to consist of the President, Mr. Sandford, two members of the board of examiners, and the assistant secretary, was afterwards appointed to visit Edinburgh to be present at the forthcoming examinations on the 26th and 27th instant.

The preliminary examination was the subject of a longer discussion. On the last occasion Mr. Greenish said 192 had failed out of 313 candidates. The questions were very simple, and he could not help thinking that a lad taken from one of the national schools would answer the questions in arithmetic in the January examination paper, but he understood that this was a subject in which a very large number of failures took place. It appeared to show that middle-class education was grossly deficient.

The Secretary said he had ascertained the following details with regard to the preliminary examination:—The total number of failures was 192; in Latin 41 failed to obtain the pass number; in arithmetic 167 failed; and in English 101. It was to be remarked that of the 167 who failed to obtain the pass number in arithmetic, 23 did not obtain a single mark in that subject.

The President added that the answers which came from the north were more deficient in regard to arithmetic than those which came from the south.

Mr. Atkins, referring to the fact that 23 candidates had failed to obtain any marks whatever in arithmetic, said he had frequently found, as a superintendent, that a young man would select out of his subjects those he knew something about and reserve the others till the last, and would sometimes actually drive himself up to the last moment and have no time left in which to deal with them. He believed a great many failed in arithmetic because they presented themselves at, perhaps, the age of nineteen, when they had forgotten the technicalities which were familiar to them on leaving school.

Mr. Schacht could not help thinking that although chemists and druggists desired to get their apprentices from the middle classes, in very many instances apprentices were obtained from a lower class. He knew of cases where boys who almost might be called charity boys were introduced into the business, and, of course, such attempts must result in failure.

Mr. Cracknell was surprised at the result of the last examination, especially as the questions on the whole were easier than they were formerly. It only showed the necessity for the Preliminary examination. It would be very desirable if the Council could prevent apprentices being taken until they had passed the Preliminary examination.

Mr. Rimmington could quite confirm the complaints Mr. Schacht had made about apprentices being taken from the lower stratum of the middle class. In all large towns there were a great number of small chemists who were unable to pay assistants or to get apprentices from the respectable middle class, consequently they took youths who were both unfitted for the business and imperfectly educated, and they had to cram up as well as they could to try and get through the examinations. He did not see how the Council could remedy this, because it could not say a man should not take an apprentice if his parents were willing.

Mr. Greenish pointed out that the comparatively few failures in Latin went to show that the young men were not taken from the lowest stratum of society. Mr. Hills believed the percentage of failures was not much greater than occurred in the Preliminary examinations of the Colleges of Surgeons and Physicians. As to the remarks respecting the class from which the young men came, Mr. Hills said he was rather inclined to think that a young man might make himself a gentleman, no matter from what stratum of society he came.

Too Much Money.

Mr. Sandford brought forward a motion advocating the transference of 500*l.* from the Society's funds to the Benevolent Fund. The proposal was only supported by Messrs. Gostling and Churchill, and was opposed on the ground that the Benevolent Fund was in a flourishing condition, and that such an addition would tend to check the flow of charity. Mr. Sandford believed that people always preferred to subscribe to a rich charity than to a poor one. The proposition was rejected by 15 votes to 3.

Counter Practice.

The following correspondence was then received from the Solicitor, and gives the communications which had passed between Mr. Flux for the Pharmaucetical Council, and Mr. Upton for the Apothecaries Society.

20 Austin Friars, London,
January 1, 1878.

Dear Sir,—

I placed the subject of our discussion before the Act of Parliament Committee of my Society.

It was their intention to have referred the decision of that Committee to the full Court of the Society, which sat the same day at a later hour, but the Court was so much occupied with other business that the decision of the Act of Parliament Committee could not be brought before them.

The communication therefore which I make to you has not that official sanction which it would have if it were a resolution of the Court of the Society, instead of the decision of a Committee formed out of that Court.

But as that Court is constituted of all the leading members of the Society, I have no reason to doubt but that the decision which they have come to will be accepted without alteration by the Court.

Their decision was, "That having regard to the statement laid before them by Mr. Upton, this Committee was unable to discover any case where the sanction of the Society had been given to a prosecution on a pure and simple case of counter practice, and that while this Committee expresses no opinion as to whether cases of counter practice come within the Act of 1815, or whether the persons prosecuted in respect of such practice are liable to the penalty imposed by that Act (although the decided cases appear to be in favour of such practice being within the Act), it is not desirable that the sanction of the Society should be given to prosecution where counter practice is *alone* involved."

I think it right to add that in nearly all cases of prosecutions by the Society, there is a double offence alleged to have been committed, viz., visiting and counter practice, and that it is impossible for the Society in giving their sanction to a prosecution to limit it to *one* of the alleged offences.

If the person who is alleged to be guilty of visiting patients is also guilty of counter practising it is impossible to withdraw the consideration of the latter question from the tribunal before which the case comes.

Under these circumstances (subject to the official sanction of the Court to which I have above referred), it is unlikely that the Court will accept the suggestion which was made by yourself to me.

Yours faithfully,
W. Flux, Esq. (Signed) James R. Upton.

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3 East India Avenue, London,
January 2, 1878.

Dear Sir,—

Referring to your letter of yesterday, you will oblige me with a line saying whether it may be regarded as a formal communication to be used without reserve?

Or whether I am to regard and use the same to any and what extent as confidential and private?

Sincerely yours,
Jas. R. Upton, Esq. (Signed) William Flux.

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20 Austin Friars, London,
January 2, 1878.

Dear Sir,—

In reply to your letter there is nothing private in the communication I sent you yesterday.

Yours faithfully,
W. Flux, Esq. (Signed) James Richard Upton.

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3 East India Avenue, London,
January 10, 1878.

Dear Sir,—

As my clients' Council Meeting took place on the morning when your esteemed favour dated the 1st inst. arrived, time did not permit of my looking into and reporting fully to the Council upon sundry materials bearing upon the considerations suggested by the letter, therefore I submitted to the Council the letter as received and made a short oral statement that the suggestion of mine to which your concluding sentence referred was to the purport that if your clients really desired to question the legality of counter practice by chemists and druggists, the matter should be openly and fairly tried in a test case, to be arranged for by your clients on the one hand and my clients on the other, and conducted by the solicitors of the Societies; so that the precise point should be satisfactorily arranged for trial by my finding a respectable chemist and druggist to perform the acts of counter practice which you may think necessary for raising the point to be the subject of decision; and so also that cessation of sundry cases might result. I also mentioned having stated to you that my clients, whilst regarding counter practice as a pub'ic and trade necessity protected by the 21st section of the Apothecaries Act, 1815, did not encourage and had no intention at variance with discouraging its exercise further than unavoidable.

In committee of the whole Council, the letters were considered so far as time would permit of, and a resolution was passed in words as follows:—

"That the letters of January 1 and 2, received by Mr. Flux from Mr. James Richard Upton, the solicitor of the Society of Apothecaries, be entered on the minutes. That the consideration of them be proceeded with at the next Council, and that in the meantime Mr. Flux do ask Mr. Upton to inform him when the resolution of the Act of Parliament Committee referred to in the letters has been considered by the Court of the Society, and also to say distinctly whether this Council may feel free to publish the letters in their discretion, or to use them in any general meeting of this Society."

I feel at liberty to mention that the tenor of the resolution passed by the Act of Parliament Committee of your Society was regarded as satisfactory to a point, but that doubts existed as to whether it was sufficiently conclusive and satisfactory, regard being had to the actual course which the litigation authorised by your Society has taken, and appears likely to take, if not controlled by you.

As it appears that the litigation has not been conducted by your Society, but by prosecutors who have obtained the sanction of your Society, on allegations concerning alleged acts, other than counter practice, I have been careful to refer to the printed reports which have appeared of the cases before the Courts, and have not found that the Apothecaries' Society (or rather those representing it) have given evidence of acts outside of the shops of the defendent chemists and druggists.

To me it appears that whatever may have been the statements upon which parties obtained the sanction of the Apothecaries' Society to proceedings that sanction has been used for the purpose of raising issues as to and only as to counter practice, and I cannot trace materials for advising with confidence that in each and every of the cases now in issue, or in any future case they can rely upon the legality of counter practice not becoming the subject of the issue on which the case will turn.

It certainly would be more satisfactory to my clients if I could convey to them an assurance that the powers of suing for penalties reposed by statute in the Apothecaries' Company will henceforth be exercised by and only by the Society acting by its own solicitor.

My clients never have delegated the powers of suing entrusted to them, and the preservation of that good understanding between the Societies which hitherto has prevailed will be less in peril if the practice of your Society in regard to litigation be placed and preserved on a similar footing.

The next Council of my Society will take place on Wednesday, February 6.

I am, dear sir, yours truly,
(Signed) Wm. Flux.

Jas. R. Upton, Esq., *Solicitor*,
20 Austin Friars.

20 Austin Friars, London,
February 5, 1878.

My dear Sir,—

In reply to your letter of the 10th ult., I am authorised to state that your clients may make any use of my letter to you of the 1st ult. which they may think right to do.

If you again refer to my letter of the 1st ult., you will, I think, find that there is really nothing inconsistent between what I there stated and what you say is the result of your perusal of the evidence in various cases to which you have referred.

I am prepared again to affirm that in the few years during which I have acted as the solicitor to the Society, I have not authorised any prosecution in a case of pure and simple counter practice, and that I shall not do so, so long as I have the honour to hold that office, and I think you may accept this, not only as the course which I should personally pursue, but as the policy of the Society.

Under these circumstances, I must ask you to let the matter rest between us where it is.

As regards the Society taking upon themselves the conduct of prosecutions, the reasons are so numerous, and (I may almost add) obvious, why they should not do so, that I do not think it necessary to go into this part of the question, but I may add that if they were to do so I am satisfied that the result would be exactly the reverse of what your clients suppose would happen.

Yours faithfully,
(Signed) James Richard Upton.

W. Flux, Esq.

The Museum Catalogue.

Thanks were awarded to Mr. Holmes for his services in the preparation of the Museum Catalogue, and it was announced that any member and Associate in business could have a copy by applying for it.

A Co Operative Store Attacked.

It was reported that Mr. Wm. Mackness, who had carried on business as a chemist and druggist in the Tottenham Court Road, under the style of the London and Provincial Supply Association, had paid the penalty and had since sold his business to a limited company.

Projected Abolition of Apothecaries' Weight.

A letter was read from the Standards Departments of the Board of Trade, announcing that a Bill was being prepared to consolidate the laws referring to weights and measures, and asking if the Society saw any objection to the legal abolition of "apothecaries' weight." The Council could not recommend this, as if the apothecaries weight were made illegal, it would prevent the sale of drugs by the dram. The Medical Council it was stated, had not intended to abandon the apothecaries' weight when they substituted avoirdupois weight for it in the Pharmacopœia.

ANALYSIS OF EXAMINATIONS FOR THE YEAR 1877.

First or Preliminary Examination.

Number of candidates during the year	1,083
Number of successful candidates during the year	577
Number of rejections during the year	506
Number of examinations during the year	4
Average number of candidates at each examination	270·75
Average number of rejections at each examination	126·5
Percentage of rejections	46·72

Major, Minor, and Modified Examinations.

England and Wales.

Number of days on which the Board met for conducting the Major, Minor, and Modified Examinations	21
Average attendance of the members of the Board of Examiners at each meeting	14 19

	Major	Minor	Modified
Number of candidates during the year	94	412	20
Number of successful candidates during the year	50	229	11
Number of rejections during the year	44	213	9
Number of examinations during the year	6	6	6
Average number of candidates at each meeting	15·66	73·66	3·33
Average number of rejections at each meeting	7·33	35·5	1·5
Percentage of rejections	46·8	48 19	45·0

Scotland.

Number of days on which the Board met for conducting the Major, Minor, and Modified Examinations	9
Average attendance of the Members of the Board of Examiners at each meeting,	6·88

	Major	Minor	Modified
Number of candidates during the year	4	94	8
Number of successful candidates during the year	3	70	4
Number of rejections during the year	1	24	4
Number of examinations during the year	2	5	5
Average number of candidates at each meeting	2	18·8	1·6
Average number of rejections at each meeting	·5	4·8	·8
Percentage of rejections	25·0	25·53	50·0

THE REGISTERS OF PHARMACEUTICAL CHEMISTS AND CHEMISTS AND DRUGGISTS, 1877.

Additions during the year:—

Number of persons who have passed the Modified Examination		15
Minor		299
Major	53*	
Number of persons registered on payment of the Registration Fee, having been in business before August 1, 1868		34
Number of persons restored to the Register on payment of a fine		22
Placed on the Register by virtue of restoration to membership—Pharmaceutical Chemists		3
An Associate of the Society before July, 1842, restored		1
An Associate of the Society before July, 1842, restored and elected a Member—Pharmaceutical Chemist		1
		375

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* These having already been included in the number who passed the Minor, do not increase the numbers on the Register.

Erasures during the year :—	
Deaths :	
Notices from Registrars	173
Other sources	57
Erased at the request of registered persons themselves ..	2
Erased by order of the Council	1
Increase of numbers on the Register	142
	375
Number of Pharmaceutical Chemists on the Register, December 31, 1877	2,307
Number of Chemists and Druggists	11,013
	13,320

Provincial Reports.

ABERDEEN.

Chemists' and Druggists' Trade Association.

A district meeting was held on the 12th inst., at which there was present a deputation from the Scotch Committee consisting of Messrs. J. Mackenzie (Edinburgh), Kerr and Russel (Dundee), as well as a fair proportion of the town and country members belonging to the Aberdeen division. Mr. Jas. Paterson presided, and in a few appropriate remarks introduced Mr. Mackenzie, who (in the unavoidable absence of the hon. secretary, Mr. J. M. Fairlie) gave in a clear, concise and distinct manner the origin and progress of the Association, recounting a number of their struggles and a few of their triumphs. Mr. Burnett (Fraserburgh) then moved—"That this meeting of pharmaceutical chemists and chemists and druggists representing the trade in the North of Scotland, rejoices in the formation of the trade Association, heartily approves of its objects, and commends it to the liberal support of the trade generally," which was seconded by Mr. John Gordon (of Messrs. J. & J. Urquhart), Aberdeen, and supported by Mr. Russell, Dundee. Mr. David Ritchie, Vice-President of the Aberdeen Society of Chemists and Druggists, then moved:—"That this meeting approves generally of the past action of the Executive for the spirited manner in which they have defended the unjust attacks of the 'Medical Defence Association,' and those uncalled-for prosecutions under the Adulteration Act," which was seconded by Mr. J. Sutherland (Aberdeen), and supported by Mr. Charles Kerr, Dundee. Mr. G. P. Cruickshank, President of the Aberdeen Society of Chemists and Druggists, then moved: "That while deprecating to the fullest extent indiscriminate prescribing by druggists, this Meeting maintains that it is the privilege and duty of the pharmacist to give advice over his counter for simple ailments, and in cases of extreme emergency," which was seconded by Mr. W. O. Ogilvie (Arbroath); all of which were passed *nem. con.* A hearty vote of thanks to the Chairman and Deputation brought the proceedings to a close, which lasted for about an hour and a half.

Aberdeen Society of Chemists' and Druggists'.—The second annual conversazione of this Society was held in the Music Hall Buildings on the evening of Tuesday, February 12. The attendance was close on three hundred, in fact the square room where the conversazione was held was quite packed. Mr. William Sinclair, sen., wholesale druggist, occupied the chair, and on the platform along with him were Mr. James Mackenzie (Edinburgh), and Mr. James Paterson (Aberdeen). Among the gentlemen present from a distance were Messrs Kerr and Russel (Dundee); Ogilvie (Arbroath) and Bertie (Auchinblae). Among the town representatives were Messrs. Sutherland, Shepherd, Forsyth, Kay, Giles, Hunter, Cruickshank, Mortimer, Davidson, Sim, and Strachan. Mr. Sinclair opened the proceedings at 8.30 p.m. with a short and humorous speech. He contrasted the present state of the trade in Aberdeen with what it was 50 years ago, mentioning at that time the ordinary shop hours were from 7 a.m. to 10 p.m. on six days of the week, and not much less on the seventh, and the first work in the morning was to light the fire, sweep the shop, clean the oil glasses (there being no gas in those days), and take water from the public well. At that time the Broadgate was the principal place of business, there being five drug shops between the top of Queen Street and the bottom of the Gallowgate, the distance not being over two hundred yards. He then proceeded to give some humourous allusions to the different kinds and price of castor oil then in use, and went on to speak of the vast progress that had within recent years been made in the science of chemistry. He concluded by giving the young pharmacists present advice to give their attention to chemistry, in which there was yet a large field for them to work. An interesting musical programme was then gone through, the solos and duets being given by the members of the trade and their friends.—A hearty vote of thanks was, on the motion of Mr. Mackenzie (Edinburgh), awarded to the ladies and gentlemen who had contributed to the evening's entertainment. A vote of thanks to the chairman finished the conversazione, after which the company adjourned to the hall-room, where they engaged in dancing for the rest of the evening, Mrs. Wiseman's band being in attendance. Supper was laid in the round and square rooms and was served during the evening. There was a telephone set up between the round and west front room, but owing to the noise it could not be taken advantage of.

BIRMINGHAM.

Chemists' Soiree at the Town Hall.

The Midland Counties Chemists' Association made great efforts this year to rival their former displays, and they succeeded in bringing together one of the most interesting pharmaceutical exhibitions we have ever had the pleasure of visiting.

The soirée was held on the evening of Jan. 23, and attracted a very large company. About 11 P.M., when the magnificent hall was at its fullest, it was very difficult to find a path through the serried ranks of the dancers, and before the gaiety had fully set in the exhibitors were well rewarded for their pains by continually renewed crowds of curious gazers and listeners.

The soirée opened with a selection of organ music performed by Mr. Stimpson. This continued for an hour, and about two hours more were easily filled up by a tour around the various centres of attraction.

The Worcester Royal Porcelain Company occupied a large space in one of the corridors, and gave illustrations of their manufactures which were of the greatest possible interest. One of the partners, Mr. Binns, was present to explain any part of the processes, and the artists themselves were ready to give any details. A potter's wheel was the starting point of this exhibition, and here was illustrated the process of "throwing." The motive power of the wheel is given by two cones, which are regulated by a lever, so that a fast or slow motion can be obtained at the will of the operator. On receiving a ball of clay, the thrower places it upon the head of a wheel or horizontal lathe before him and presses it with both hands; the rotary movement causes the clay to rise in the form of a stalk or cone, which he then depresses and again allows to rise. When the clay is thus made ready he inserts his thumb into the mass, moulding and fashioning the outsides with the other hand. In this way cups, bowls, and all circular articles are formed, the correctness of outline depending entirely on the manipulation of the thrower. Another process exhibited was figure-making and casting. For this purpose moulds are used, and the china employed is a liquid "slip," like cream. This is poured into the orifice of the mould left for that purpose, and then allowed to stand for a short time. When sufficient slip has adhered to the mould the remainder is poured back into the casting jug. The moulds being porous the water is absorbed, leaving the inside of the article hollow, and the slip soon becomes solid enough to enable the workman to handle it. He next arranges all the pieces, trims off the superfluous clay, makes a perfect joint, and each part is fitted to its proper place until the whole figure is built up as required. For some huge figures as many as 97 different moulds are required, and even the very smallest are represented by eight or ten separate parts. The subsequent processes of baking and glazing were explained; but it was, of course, not possible to illustrate them practically. Another very interesting operation, however, was exhibited—namely, the decoration of porcelain. The mode of painting the beautiful colours and objects for which the Worcester china is so noted was intelligently described by an artist, whose manipulation of the finely-executed patterns and explanation of the various stages through which the work advances and the gilding process attracted the utmost attention, and afforded no little interest. The crude materials of which the procelain is composed were also exhibited, and beautiful samples of finished work, in Japanese and other patterns, as well as examples of hand-painting, were shown by the company, to whom the society and the visitors are deeply indebted for this most interesting exhibition of their processes in the manufacture of procelain.

In another part of the building Messrs. Gammon, Marrian & Co., the well-known Birmingham lozenge makers, had several girls at work making up lozenges. The evolution of peppermint paste into Cinderella's slippers, with a little pink latchet attached, caused much pleasure, and the process was very popular. Further on, Messrs. F. S. Cleaver & Sons, of London, had fitted up some steam machinery by which they manufactured perfumed toilet soap expressly for this occasion. The peculiarity of their process was that they were able to mix the scent with the cold soap, and thus, as may be assumed, ensure a more delicate odour. This was effected by a mill, into which soap in shavings is first put, and from which, after much torture, it emerges in very thin ribbons. The scent is mixed with it during the working in the mill. These are next packed into another machine something after the style of a coffee mill, and are there formed into a mass, which is finally discharged through a mouth in the form of bars. The bars are cut into tablets or squares by other machinery, and ladies were invited to work at this, the result being a cake bearing the inscription, "Presented by F. S. Cleaver & Sons, at the Midland Counties Chemists' Association Soirée, Town Hall, Birmingham, January 23, 1878." Messrs. Cleaver also exhibited an ingenious machine for filling and closing collapsible tubes of perfumes. This machine was said to be the only one of the kind in existence. About two dozen tubes are placed in the machine, upside down, and after filling are run along to a part of the machine where the open ends are caught by "jaws," nipped together, and doubled over.

Very interesting to chemists, too, was the machinery shown by Messrs. W. F. Hunt & Co., of Hill's Place, Oxford Street, by which their very neat and useful pleated paper capsules for medicine bottles were being made on the spot. Those who have not seen these can have no idea of the improvement in the "costume" of a bottle of medicine effected by them. A couple of sizes suffice for all the ordinary medicine bottles, and they can be supplied with the name printed on the centre. Mr. Hunt tells us that he is preparing a series of larger size pleated paper cases to hold and cover cold cream pots, turned wood boxes, soaps, &c.

Among the "machinery in motion" should also be included the production of lead plaster, which was exhibited by Messrs. Southall Bros. & Barclay. The process of converting the red litharge into the white plaster was shown in all its stages, and the performance of "pulling" the plaster while in a plastic state, to develop its whiteness, was watched with considerable interest. Messrs. Southall & Barclay had likewise several other very noteworthy displays, on the arrangement of which great labour had been expended, the credit of much of which, we believe, is due to their chemist, Mr. H. W. Jones. Among the other collections shown by this firm, we may name a most instructive series of the alkaloids, including quinine, morphine, strychnine, emetine, atropine, and aconitine. In each case samples of the original drug (bark, root, fruit, &c.) were shown, and ranged by its side were samples of the several results obtained in all stages of the manipulation down to the final purification of the alkaloid. The production of the various flavouring ethers was also shown in a somewhat similar manner. A very interesting study, too, was a collection of specimens illustrating the chemical composition of nearly every article of food and drink, showing by analysis the several constituents and relative value of each kind of food. There were altogether twenty-one specimens, and the quantitative analysis of a few of the articles will perhaps be instructive. In 1 lb. of lean beef there are 7,000 grains, which are made up as follow: —Water, 5,040; nitrogenous or flesh-forming matter, 1,351; fat, 251; mineral matter, 357. In the same weight of lean mutton the nitrogenous matter is 1,281, and the fat, 343; while fat beef has 1,036 grains of nitrogenous matter and fat mutton only 868; thus showing that the popular notion that lean beef is more nutritious than lean mutton is fully borne out. Among the vegetables peas contain more nitrogenous matter than any other vegetable; in fact, more than beef, the proportions in 7,000 grains being:—Water, 1,050; nitrogenous matter, 1,610; starch, 3,878; sugar, 140; fat, 147; mineral matter, 175. In drinks, again, one pint of 16 ozs. of port or sherry contains 1,260 grains of alcohol and 7 of nitrogenous matter, while a pint of beer of 20 ozs. has 490 grains of alcohol. Close by these specimens Mr. H. W. Jones, F.R.M.S., exhibited an ingenious apparatus for analysing tobacco, by the use of which a series of poisonous organic bases are obtained —such as prussic acid, sulphuretted hydrogen, carbonic acid gas, &c.

Messrs. Philip Harris & Co. had a fine display of electric apparatus and chemicals, and a collection of models of crystals in Bohemian glass. Messrs. Wyleys & Co., of Coventry, made a prominent display of the newest remedies of pharmacy. Mr. E. Robotham, of Birmingham, exhibited show cases, and the local agents of the Terra Cotta Company of Torquay, of which we believe a well-known pharmaceutist is one of the founders, exhibited some beautiful specimens of their artistic products.

Mr. Marlow showed some pretty experiments by bringing an alcoholic solution of an aniline or other colour through a narrow tube to the bottom of a vase containing two liquids of different densities, salt and water and water, or sugar and water and water, for instance. The coloured liquid assumes very fantastic shapes as it gradually rises in the vase. Mr. Wright Wilson showed experiments with the electric light, and Mr. W. J. Lancaster with the telephone.

After 10 o'clock a quadrille band summoned the visitors to the ball, which always finishes up these assemblies, and this part of the performance was continued till an early hour in the morning.

The town and district of Birmingham were abundantly represented, and all the neighbouring towns sent a contingent of visitors. Liverpool, Manchester, and London were likewise represented.

DUBLIN.

Pharmaceutical Society of Ireland.

The monthly meeting of the council of the above society was held at the College of Physicians, Kildare Street, on February 6, the president, Sir D. J. Corrigan, Bart., in the chair. The following were present:—Dr. A. Smith, vice-president, Mr. W. Allen, Mr. J. G. Boileau, Dr. Collins, Dr. Frazer, Mr. J. Goodwin, Mr. W. Hayes, Mr. E. M. Hodgson, Mr. J. T. Holmes, Mr. S. Oldham, Sir G. B. Owens, Professor Tichborne, and Dr. Whittaker, Belfast.

A communication was read from Mr. Shillinglaw, Hon. Sec. to the Pharmaceutical Society of Victoria, stating that his society was desirous of being in communication with the Irish society. A copy of the Victoria Pharmacy Act was also sent, one of the provisions of which is that the Irish qualification is recognised in the colony. The President stated that he had sent a reply expressing thanks.

The following, in pursuance of notice of motion, was proposed by Mr. Hayes, seconded by Mr. Holmes:—

> In consideration of this Council having invited the Pharmaceutical Conference to hold its annual meeting in Dublin this year, it is desirable to give a donation of 25*l.* from the funds of this Society towards the expenses of the Conference.

Considerable discussion took place as to the legality of applying the society's funds for the purpose. Sir G. B. Owens suggested that legal opinion be taken. Mr. Holmes remarked that if it was irregular to vote money for that purpose it was likewise irregular to pay for legal opinions. A member thought legal opinions of little value, and that there was such a person as a public auditor. The motion led to a long discussion. Professor Tichborne, Dr. Whittaker, Mr. Oldham, and Mr. Holmes urged its adoption. The president, vice-president, Sir G. Owens, and others spoke against. Mr. Hayes, in reply, stated that he felt it his duty to put the matter to a division. The result was an equal number for and against, and Mr. Hayes, with the permission of the council, withdrew the motion.

The report of the examiner at the preliminary examination held on Monday, January 7, was handed in, stating that all the candidates had been successful.

The Pharmaceutical Conference.

The deputation appointed at the previous meeting of the Irish committee, formed to receive the Pharmaceutical Conference, waited by appointment on the Governor and Company of the Apothecaries' Hall on Friday, January 27, to solicit their support in giving a fitting reception to the English and Scottish pharmacists expected at Dublin in August next. The following formed the deputation:—Mr. Allen, Mr. Boyd, Mr. Hayes, and Mr. Holmes. Mr. Hayes stated the object of the deputation. The Governor, in reply, said that the Company could not give a definite reply at present, as they could not vote money without giving notice, but that a meeting would be called for the purpose of considering the matter, and their decision would be forwarded to Mr. Hayes. Mr. Holmes remarked that the co-operation of the Hall was desirable, independent of the money consideration, as, beyond question, that body, until the recent change in the law, were the only representatives of pharmacy in Ireland. A considerable amount has been received by the Irish Committee towards the expenses of the Conference.

LEEDS.

Below will be found *resumés* of the papers read before the Leeds Chemists' Association at the last three general meetings. On each occasion the chair was occupied by Mr. P. Jefferson, the president, and a vote of thanks cordially awarded to the lecturer.

"Colour and its Lessons"

was the subject of the paper read by Mr. H. Pocklington, F.R.M.S., on November 14, 1877. Treating the subject from the physical and physiological basis, he briefly touched upon the nature of light, explaining the undulatory theory and showing how completely it explained the varied colour phenomena met with in nature or brought about by scientific experiment. He then discussed somewhat fully the question as to how far the sense of colour-seeing was explained on the three nerve theory, expressing his own belief in the, at all events, approximate truth of the theory which he thought was beautifully supported by the different results obtained by purely ocular analysis of coloured or white light, and those obtained by prismatic analysis of the same light. He showed, for instance, that all the green lights of nature were impure and contained a large admixture of red and blue, and also that it was possible to obtain white light, which was sensibly pure white light to even the cultured eye, but which the spectroscope proved to be by no means the white light of the sun which itself does not contain light of all the wave lengths comprised between the red and violet ends of the spectrum.

Mr. Thos. Fairley, F.C.S., contributed the paper for Dec. 12, 1877, entitled,

"Spontaneous Combustion and the Causes of Fire," with Experiments.

He showed that the term spontaneous combustion may be used either in a general or special sense. In the one it refers to all fires not due to the actual contact of hot bodies or the direct action of heat. In the other it is restricted to the combustion produced by the chemical action of bodies originally cold upon each other. He explained and showed experimentally numerous cases of spontaneous combustion due to the latter cause, more especially where the combustible bodies are finely devided so as to expose a large surface to the action of the air or other gases acting upon them. Finely divided metals, such as lead, iron, and zinc, take fire when exposed to the air. Recently fires have occurred on board ship, due to the action of water on cargoes of zinc dust. The lecturer also instanced the class of nitro-compounds, of which nitro-glycerine and gun-cotton are best known. These, if impure, become still more liable to spontaneous combustion and explosion, as shown by the numerous accidents which have occurred. He referred to the Australian emigrant ship believed to have been lost by the explosion of badly prepared gun-cotton, forming part of its cargo. Of fires due to other causes, he mentioned instances of buildings, trees, &c., set on fire by the electric discharge, and in particular the recent fire at Inverary Castle; also the fires caused by the heating of the bearings of machinery, by friction, or any kind of resistance to motion. Mr. Fairley next described the conditions under which ordinary materials—such as wet hay, sawdust, oily waste, &c., tend to heat and fire spontaneously, illustrating these by experiments with readily inflammable substances. He described the mode of conducting experiments to ascertain the heating tendency of oils used in manufactures. In experiments undertaken for this purpose, he found that cotton-seed oil and similar drying oils applied to cotton wool, and kept in a warm atmosphere, took fire spontaneously in eight hours or even a shorter time. Other causes of fire, different from the preceding, are those produced by dangerous substances, either on account of their low ignition point, or because they cannot be extinguished by water, or because they give off an inflammable vapour at temperatures near the ordinary range of our climate. Sulphide of carbon is a material which is now extensively used for extracting fat from seeds, wool-waste, &c., and for other purposes. It is also present, sometimes in considerable quantities, in ordinary coal gas. It is very inflammable, taking fire at a temperature not far above that of boiling water, viz., 300° Fahr. While ordinary combustibles can be readily extinguished by the application of water, petroleum, and similar light oils which float on water, cannot be extinguished by this means; in such cases sand, ashes, dry earth, &c., are the proper materials to throw on the fire. The Act of Parliament relating to petroleum requires that such liquids shall not be sold without a special label where they give off an inflammable vapour at temperatures below 100° Fahr., and the lecturer showed how the "flashing test" can be applied to distinguish such liquids. In concluding, he drew attention to the application of tungstate of soda to render muslin and other fabrics non-inflammable.

On January 9,

"The Geographical Distribution of Plants"

was the subject of a paper by Professor L. C. Miall, F.G.S. He referred to the different species of plants found in the tropics, temperate, and arctic regions, pointing out that these were quite distinct in the majority of cases, although some, such as the leguminosæ, were indigenous to the temperate and torrid zones, yet in this country they rarely exceeded the size and character of a shrub, whilst in the tropical regions they assumed the proportions of large trees. Some plants in this country appeared to have their likes and dislikes; some being found only on the tract of limestone, whilst others preferred the sandstone grit, and were never found upon limestone soil. Another species is always found upon or near to the sea-coast, and rarely inland except where there are salt marshes. Several European plants were quite cosmopolitan, being found in almost all parts of the world; but how they were so widely dispersed was not easily understood. Some seeds were no doubt carried by the winds, others by migratory birds or merchandise. This was the case with seeds from many foreign parts which came to this country in the ballast of ships, in bales of cotton, and various other ways. It was remarkable, however, how few of those imported into England were acclimatised, while those from this country, distributed, no doubt, by similar means, flourished with astonishing rapidity in America, Australia, and other countries. The mere compilation of the names and number of plants found in certain districts was not so useful as precise information of the soil, position, and circumstances in which they were met with.

NOTTINGHAM.

Un Enfant Terrible.—On January 31 Mr. G. Shepperley, chemist, was charged with selling poison without making a proper entry in his book, in contravention of the Pharmacy Act of 1868. At the Lincoln winter assizes a coiner from Nottingham was convicted, and it transpired that the prisoner bought two ounces of cyanide of potassium of Mr. Shepperley. At the trial Baron Huddleston commented on the way in which this poison had been sold. He recommended the local authorities to take proceedings, and consequently the present summons was issued. Defendant pleaded guilty, but his solicitor pointed out that, as the cyanide was much used by photographers and electroplaters, chemists were placed under considerable difficulties with regard to it. The Bench imposed the full penalty of 5*l*.

Nottingham and Notts Chemists' Association.

The annual supper was held at the Flying Horse Hotel, on Tuesday evening, January 29, when thirty gentlemen assembled. The chair was occupied by the vice-president, Mr. R. Fitzhugh, F.C.S., who was supported by the treasurer, Mr. Rayner, the hon. secretary, Mr. R. Jackson, and most of the members of the council. After the usual loyal toasts, Mr. Rayner proposed, in complimentary terms, "The Pharmaceutical Society," which was heartily drunk. Great regret was felt that, through indisposition, the president (Mr. J. H. Atherton) was not able to be present and respond as usual to the toast. Mr. Rivers Langton then proposed the toast of the evening, "Success to the Nottingham and Notts Chemists' Association." He eulogised the educational work of such associations, and spoke of the great benefit they were to members of the trade generally in promoting friendly feelings and rubbing off rough corners, and concluded by coupling with the toast the name of the vice-president, who responded, and mentioned with much satisfaction the testimony which had been born to the value of the association by some former students, who were now conducting improvement classes for the benefit of the associates. Mr. Warriner next proposed "The Medical Profession," which was responded to by Dr. Lill, who assured the company that the great majority of medical men did not wish at all to interfere with chemists in the legitimate exercise of counter prescribing, but only wished to put a stop to chemists treating patients in serious cases. Mr. Pearson then proposed "The Executive," and eulogised the officers and council for the energetic and hearty way in which they worked for the association, and coupled with the toast the treasurer and secretary, who both suitably responded. The remaining toasts were "The Visitors," proposed by Mr. Bolton, and responded to by Mr. J. J. Harvey; "The Vice-Chairman," by Mr. W. H. Parker, acknowledged by Mr. J. Lewis; and "The Ladies," proposed by Mr. Ward, and responded to by Mr. W. Widdowson. The proceedings were agreeably diversified by a capital selection of songs and duets with some choice music, and a very pleasant evening was spent.

SCARBOROUGH.

Mr. J. H. Hackett informs us that in the account of the fire at a chemists' shop at Scarborough a slight error occurs. Our report said it was at the shop of Mr. Duncombe. The facts are that the shop is Mr Hacketts, and Mr. Duncombe is his manager.

SHEFFIELD.

The Chemists' Association.

During the month the annual meeting of the Sheffield Pharmaceutical and Chemical Association has been held. The number of members is now about 47. The Association has given up its former rooms in Tutor-place, and has lodged the library and museum with Mr. H. W. Maleham, 7, West Bar. The library is now at the disposal of every member of the Association. The subscription has been reduced from 10*s.* to 5*s.* The income for the year has been 40*l.* 12*s.* 11½*d.*, and the expenses, 5*l.* 10*s.* 1*d.*, leaving a balance of 35*l.* 2*s.* 10½*d.* Last year, the balance in hand was only 6*l.* 6*s.* 9½*d.* The action of the Association in the matters of counter prescribing, milk of sulphur prosecutions, and in supporting the proceedings of the Chemists' and Druggists' Trade Association has been acknowledged by the parties interested to be of real and great value. The former President, Mr. W. V. Radley, on leaving Sheffield summoned the members to a farewell supper. His loss to the Association is fully appreciated. In his place W. Ward. Esq., F.C.S., has been elected President for the coming year. The other officers of the Association are Messrs. G. Ellinor and H. E. Ibbett, Vice-Presidents; W. Jervis, Treasurer; H. Turner, Hon. Secretary; and C. Warner, subscription collector, re-elected; G. A. Cubley, H. W. Maleham, J. Watts, W. S. G. Newsholme, J. Otley, G. Carr, J. Clarke, and J. S. Burnell, Council. During the year only two members have withdrawn, and the "Year Book of Pharmacy" has been added to the library.

The Troubles of an Unqualified Assistant. — The Coroner at Sheffield is carrying on a somewhat undignified crusade against a Mr. Turner who has the misfortune to be an unqualified assistant. Some eight years ago the house surgeon at the Sheffield public hospital and dispensary was a Mr. John Edley Taylor. He got out of favour with the governors, had to leave, brought an action against them at the Leeds Assizes for damages, and obtained a verdict. He subsequently established provident dispensaries in various parts of the town, and in doing so he further incurred the ill-will of the great body of his professional brethren. One of these branch institutions is at Attercliffe, where the large ironworks are, and where there is an immense working class population. As his assistant there he secured the services of Mr. Turner, who was for five years with Messrs. Favell & Son in Norfolk Street, surgeons; for eight years dispenser at the public hospital and dispensary, where he made up on an average at least 1,000 prescriptions per week, and for four years he has held his present position, it being his intention ultimately to qualify and enter the profession. A little while ago Mr. Taylor died, and Dr. O'Meara has succeeded him as the principal of the provident dispensaries, and it need perhaps hardly be stated that he has inherited the kindly feeling entertained towards his predecessor. It happened that at the end of last year three little children who had been vaccinated by Mr. Turner were subsequently attacked with erysipelas and inflammation and died. Because of the surrounding circumstances the Coroner held an inquest in each case, and in one the jury returned a verdict of manslaughter against Mr. Turner, and on that charge he now awaits his trial. Since then inquests have been held on two other of his patients. On January 20 the parents of Ellen Fagan, three years and ten months old, took her to the Attercliffe Dispensary, and Mr. Turner told them she was suffering from bronchitis and prescribed for her accordingly. The child became rapidly worse and died before Dr. O'Meara could see her. He however gave a certificate stating that his assistant had seen the child, and he was of opinion that it had died from bronchitis. The Registrar refused to accept the certificate, and the matter was reported to the Coroner, and to him the parents expressed their satisfaction with what had been done for the child. He however, it is stated, said that as the assistant was Mr. Turner he should hold an inquiry into the cause of death. Had it been any other assistant he might not have done so. A *post-mortem* examination of the body was made and death was found to have resulted from bronchitis. At the inquest there was quite a display of feeling on the part of the Coroner towards Dr. O'Meara. Unaware of his presence, the Coroner said that Dr. O'Meara, in signing the certificate stating he had seen the child when he had not done so, was clearly guilty of deception. Dr. O'Meara replied with considerable warmth that he had not said so. and therefore was not guilty of deception. He had followed the common practice, and surely he had as much right to have an unqualified assistant as other medical men of the town. The Coroner admitted that he had as much right, but again and again repeated his allegation that the Doctor had been guilty of deception. The Doctor as often denied that he had given a certificate to that effect, until at length the Coroner ended the dispute by peremptorily ordering him to leave the room. The inquiry ended in a verdict of "death from natural causes." The second case was that of a child named Joseph Cox, ten months old, who had been treated by Mr. Turner for convulsive fits, and had died. The *post-mortem* fully bore him out in his conclusions, and here again a harmless verdict was returned. There are about sixty unqualified assistants in Sheffield, and there is a feeling in the town that Mr. Turner has been singled out for punishment partly through jealously of the rival provident dispensaries.

THE TELEPHONE.

By W. L. Howie.

So great has been the interest taken in this latest application of electricity, that although the first public exhibition of the Telephone took place in Boston, U.S., so recently as May of last year, it has already found its way over the greater part of the civilised world, and though manufactured in great numbers both in Europe and America, the supply is said to fall far short of the demand. The wonderful and novel effects obtained from such strikingly simple apparatus explain to some extent this popularity, and though the results hitherto attained are, without doubt, wonderful beyond what could have been dreamed of by the most advanced scientists a few years ago, there is still reason to believe that the invention is yet in its infancy. It may be that a short non-technical explanation of the apparatus and the theory involved in its construction, as well as such particulars as would enable any one with a little mechanical ingenuity to put together an experimental set, would prove acceptable to the readers of the Chemist and Druggist.

We may pass over the history of the invention, in which we find recorded the names of Page, Varley, Reuss, Eray, and Lacour, as inventors of "musical telephones;" that is, instruments which could transmit to a distance by means of electricity sounds of varying pitch, but which were totally destitute of the articulation, without which no word can be reproduced. By these instruments tunes could be, so to speak, sent by telegraph, some even being equal to the transmission of chords; but to the ingenuity and resource of Professor A. Graham Bell, a native of Edinburgh, belongs the crowning honour of being the first to transmit articulate speech. The sounding apparatus of the above-mentioned musical telephone was usually formed of vibrating steel rods or forks, and at the suggestion of Mr. Blake, a Boston aurist, Professor Bell was led through the study of the human ear to the adoption of a diaphragm for the articulating part of his telephone, which, as at present made, consists of a thin iron disc, so fixed as to vibrate freely in front of a permanent bar magnet, round one end of which is coiled a reel of insulated copper wire, which forms part of a circuit containing a similar instrument at such a distance as the operators may determine. When a sound is made in the near neighbourhood of one of the iron discs it vibrates; in other words it moves to and from the end of the permanent magnet, with a speed varying with the pitch of the sound. This motion induces an undulatory current of electricity in the coil surrounding the magnet, which is transmitted to the other instrument in the circuit, and by a reverse action so disturbs the condition of its magnet that it attracts and repels the corresponding disc, causing it to vibrate in exact unison with the one first moved.

The capacity of a diaphragm to reproduce all the varying tones and qualities of the human voice is exemplified in the simple toy known as

The Thread Telephone,

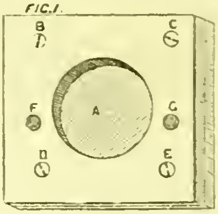
which may be made from a couple of two-ounce willow boxes, the bottoms of which are replaced by gut skin or parchment paper, stretched while wet, and held in position by the rim of the lid. A linen or other non-elastic thread connects the two diaphragms through a pinhole in the middle; and if these boxes be now held apart to the full limit of the thread, a whisper spoken into one is distinctly heard in the other, and if the distance is great enough to be out of ear-shot, the tone and quality of ordinary speech, or music, is faithfully reproduced. The thread telephone is good for the distance the thread can hang free and straight, which may be fully 100 yards. Even corners may be compassed by carrying the thread over the tip of a piece of whalebone projecting from the angle; but the transmission of the sound here is simply mechanical, the vibrations of one membrane being communicated directly along the thread to the other. Diaphragms of thin metal and a wire connection in like manner give good results, but on the same principle. In this toy, first introduced some thirty years ago, and sold in the streets for a penny, we have a most striking and instructive illustration of the capacity of a diaphragm for reproducing sounds of even a very complicated character. A piano string when it vibrates produces one simple sound, the pitch of which varies with the speed with which it moves, the motion being simply to and fro. But the vibration induced in a diaphragm is wavelike, and two or more motions may exist in one disc at the same time without interfering with one another; thus chords are produced and even the more complicated sounds of the human voice, the vowel sounds of which are said to consist of one dominant note, and several subsidiary tones or harmonics.

The Telephone of Professor Bell

is in outward appearance not unlike a clumsy stethoscope, the stem of which contains the magnet and the expanded end the coil of wire and iron disc. The funnel-shaped mouthpiece over the disc condenses the sound so that it may impinge with concentrated force on the centre of the plate. The telephone must be spoken to with measured and distinct utterance, giving as much of the vowel or resonant quality to the words as possible, some of the consonant sounds being but imperfectly taken up, the chief difficulty occurring, perhaps, with s; so that plurals in many cases are scarcely to be distinguished from the singular of the same words. Some training is therefore necessary to make a successful telephonic speaker, even if a suitable voice be possessed; for certain voices are more suitable than others for the same instrument. The hearing of the listener must also be acute, as the telephonic voice even under most favourable circumstances can only be heard at a distance to be measured by inches and in a room into which no disturbing noises enter. It has thus been suggested that for the successful working of the telephone, a padded room at either terminus is a necessity. This is in marked contrast to the exaggerated newspaper articles we have been familiar with, which gave us to understand that the oratory of a great preacher could be "laid on" to churches all over the kingdom, without the necessity of the speaker leaving his study, and that Parliamentary debates would soon be heard in the most remote corners of the land simultaneously with their delivery at Westminster. We are indebted only to the too vivid imagination of the penny-a-liner for such visions. Though the telephone has not yet realised all that fancy has painted, it is no doubt capable of great things, and as an experimental set may easily be put together, I shall detail the method of construction. The instruments made by the company working the patent cost *50l.* and upward for a double set, and as this company has the sole right of manufacture for the United Kingdom it may be well to warn amateurs against using home-made instruments for any but experimental purposes.

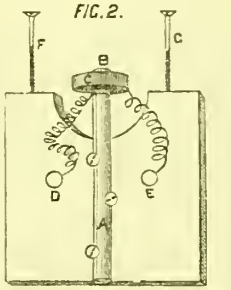
First, then, take six pieces of mahogany 4 inches by 4 inches, and $\frac{3}{8}$ inch thick. Screw four of these together, two and two, by means of a brass nail at each corner, as represented in fig. 1.

FIG. 1.



Then bore a 2-inch hole (A) through the centre of each pair. Take a couple of ferrotype plates, and roughly cut them into 3-inch discs, which are to be placed between the pieces of mahogany just mentioned by undoing the screws, and again tightening up. We have thus a pair of 2-inch diaphragms. The magnets are then to be mounted as in fig. 2. Procure a pair o permanent bar magnets (A) 4 inches long and $\frac{3}{8}$ inch diameter, with holes screwed into each end, and into one end of each fix a piece of $\frac{3}{8}$ inch soft iron rod (B), $\frac{1}{2}$ an inch in length beyond the screwed piece. An ordinary sixpenny horseshoe magnet (A, fig. 3) answers admirably instead of the bar form, but the soft iron rod (B) must then be 1 inch long, and one-half of its length flattened, so as to lie close to the flat side of the magnet, to which it may be bound with twine. Common thin tinned iron may also replace the ferrotype plates, though these, at one penny each, and all other necessaries, may be procured from most philosophical instrument makers. On the soft iron rod (B), slip, $\frac{3}{8}$ inch apart, two bone rings as used for shields for feeding bottles, having enlarged the holes with a file that the rings may fit tightly over the iron, then wind on the reels thus made (C) $\frac{1}{4}$ of an ounce of No. 36 silk-covered copper wire, leaving some inches of each end hanging free, and cover the whole with a few rounds of knitting wool for protection. Now fix the magnets (A), thus armed, on the odd pieces of mahogany by means of screws (in the case of the horseshoe magnet, by passing a screw through a bone shield and tightening down as shown in fig. 3), having first cut out of one end of the boards a semicircle for the reels (C) to fall into. Now fix the boards carrying the magnets to the diaphragms by means of a couple of brass screws (F G), so that they take the form of the letter T, the magnet being the leg and the diaphragm the top piece. Take care to have the magnet in the centre of the disc, and adjust it so as to be as close as possible without touching when the latter vibrates. The two free ends of the wire should now be fixed to the board by "terminals" (D E)—or these may be replaced by a couple of common screws—and the instruments are now complete; but they are improved by fixing outside of the diaphragm a turned mouthpiece (M, fig. 4) made of mahogany.

FIG. 2.



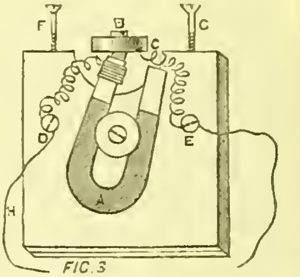


FIG. 3

It is only necessary to take one out of earshot, and connect the two instruments by a double line of wire, or if one line wire only be used, both of the free terminals must be connected with the earth by a gas or water pipe to complete the circuit. This form of mounting has the very decided advantage to an experimentalist that all parts are open and easily got at for alterations or adjustment, which is not the case if the turned wooden case is used; with moderate care it is almost impossible to fail in getting some result even on the first trial, and after that it is merely a question of adjustment to get the instruments to articulate quite distinctly. If they fail at first to reproduce words, try singing, which is much more easily caught by a listener.

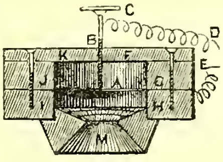


FIG. 4

A very curious and interesting result may be got by putting a "contact breaker" (fig. 4), and a 1-cell battery in the circuit with one telephone. By singing into the "contact breaker," which must be adjusted by turning the screw (B) till the vibration of the plate causes a buzzing noise, such as is produced by singing upon a comb held in a fold of paper, the telephone (in another room, of course) will be heard to sing so loudly as to be heard over a large room. There is here, however, no articulation; the "music" being akin to that produced by a squeaking trumpet, and is of the same type as that which created such a stir and disappointment at the Queen's Theatre, in London, in August last. The "contact breaker" consists of a ferrotype diaphragm mounted as fig. 1 for the telephone, and is shown in section in fig. 4, A being the iron disc, G H I J the 4 inch by 4 inch boards. The varnish must be removed from the highly polished side of the iron by laying it a couple of minutes on a piece of blotting paper soaked in chloroform. A slip of wood, K F, is fixed across the 2-inch opening in the form of a bridge, and a pointed brass screw driven through it, and carefully adjusted so as to nearly touch the naked iron. A piece of wire, E, is soldered to the iron plate, and another, D, to the nail, as well as a cross-piece, C, for handiness in adjusting the screw. In fig. 4 is also shown the mouth-piece, M, in section. If properly shaped the acoustic qualities of the telephone are greatly improved by its use, and it is a necessity with the contact breaker, as in singing, the mouth must be applied closely to it. An arrangement of this sort might in some cases supersede the electric call-bells which are necessary for use with the telephone, since of itself it does not make noise enough to attract the attention of one whose ear is not in its immediate vicinity. This apparatus may be made the subject of a number of very interesting experiments. When the telephone is singing, it will be found that the finger placed on the vibrating diaphragm does not stop the sound—that, in fact, the electro-magnet, itself detached from the diaphragm, sings quite distinctly if held into the ear, so that it is evident the disc only amplifies the vibrations so that they may be more easily caught by the ear, and this leads us to the belief that in the telephone, when used as a speaking instrument, the magnet itself speaks by what is supposed to be a molecular motion in the iron, though the sounds are so feeble as to be imperceptible without the diaphragm. It is said, however, that a speaking telephone has been invented in which the iron disc is abolished, and from the experiments above hinted at this does not seem at all unreasonable.

SCIENTIFIC AID TO MEDICINE.

By W. B. A. Scott, M.D.

It must be admitted that most of the efforts which have been hitherto made to establish any direct practical relation between medicine and its allied or ancillary sciences have been signally unfortunate. When the early "Dogmatists" sought to find the point of union between certain pathological conditions on the one hand, and certain drugs on the other, in the supposed possession by each of certain "primary" qualities, as heat, cold, dryness, and moisture, it was easy to demonstrate that in each case these qualities were assigned to their respective subjects on purely arbitrary principles, and even with no slight amount of inconsistency. Thus, in endeavouring to explain the supposed efficacy of powdered crab shells in hydrophobia, Pelops first insists that hydrophobia is a "dry" disease, because hydrophobic patients are afraid of water, while crabs are a "moist" remedy, as those creatures live in that element. But he adds that the shells of crabs are preferable to those of other marine animals, because the former admit of calcination, *thereby becoming exceedingly desiccative.* Again, the members of this school were at variance among themselves as to whether, in a therapeutical point of view, attention ought to be paid to these "primary" qualities of heat, cold, &c., or to the "secondary" qualities of sweetness, sourness, and the like. The latter seems to have been the opinion of Hippocrates, and is explicitly stated in his work *De priscâ Medicinâ,* although the former was advanced in one of the pseudo-hippocratic treatises, and adopted by Galen. With equal vagueness, as a rule, were the "relaxant" and "astringent" qualities of the "Methodists" ascribed either to drugs or to morbid states. In later times, the endeavours of Des Cartes to found a therapeutical system on mechanical or mathematical principles, which formed the basis of the "iatro-mathematical" school, resulted in doctrines and practices which, according to Kurt Sprengel, "caused a greater sacrifice of human life than many wars;" while the "iatro-chemical" school of Sylvius and others deserves hardly less severe condemnation. And, even in our own days, when every department of natural science is so much more thoroughly investigated, few will deny that it would be impossible to construct a pharmaco-dynamical classification of drugs on principles which should coincide with those on which they are conveniently arranged in accordance with their chemical, botanical, or mechanical properties. The late Professor Lindley, indeed, seemed to maintain that plants belonging to the same natural order might often be expected to possess similar therapeutic actions; but although this may, perhaps, occur sufficiently often to warrant the adoption of this mode of classifying vegetable drugs in works on *Materia Medica* (where classification of some sort, more or less arbitrary, is matter of necessity), still the exceptions are too numerous and too flagrant to permit such an arrangement to be regarded as even approximatively satisfactory in a therapeutical aspect. Nor, indeed, is there much reason to expect it to be so. In the "natural" classification, plants are arranged according to *general* resemblance or affinities; the medicinal action of each forms but *one* property, and one in which plants of the same order are no more likely to coincide than in the more obvious properties of colour and size. And, as a matter of fact, what are we to think of a scheme of pharmacodynamics which would classify together carrots and hemlock—quinine and ipecacuanha—santonin, arnica, and camomile—potatoes and capsicum—cascarilla and croton oil—Calabar bean, liquorice, and balsam of Tolu—senna, logwood, and copaiba—aconite and podophyllum, and so on? It would be equally difficult to classify (pharmacologically) a collection of mineral drugs on the principles of such an arrangement as would be suitable for a chemical hand-book. As to the more obvious physical properties of drugs, such as sp. gr. roughness, sweetness, colour, and so forth, no one would nowadays venture to adopt these as the basis of a therapeutical classification any more than he would think of reverting to the old doctrine of "signatures." It seems clear, therefore, that if the "allied sciences" are to be utilised for the real advancement of medicine—unless, in fact, they are to be misapplied to its most serious detriment—this must ensue not from the adoption of their distinctive laws as our immediate guides in medical *practice,* but from availing ourselves to the uttermost of their aid in the pursuit of our medical investigations. In this way, chiefly if not exclusively, can they help to furnish a scientific basis to the practice of medicine. Let us briefly inquire how they may be thus utilised.

Professor Gamgee, in his opening lecture at Owen's College, Manchester, 1873, thus expressed himself:—"It will, however, only be when general laws connecting disease with health, and establishing a perfectly rational system of therapeutics shall be applicable to the whole body of medical facts that the term "science" will be legitimately applicable to medicine. Experimental pathology, studying the synthesis of disease, and experimental pharmacology, localising the actions of drugs on the tissues and organs of the body, are fast following in the steps of the rapidly advancing science of physiology, of which they are but departments; and, young though they are, are furnishing the materials for a real science of medicine." These remarks, excellent as they are, seem to require a little explanation. It is difficult to see what practical benefit can ensue from the most intimate acquaintance with pathology on the one hand and pharmacodynamics on the other, unless we can succeed in establishing some definite relation between the phenomena observed in each. This desideratum Professor Gamgee fails to supply; but an increasing body of medical men, homœopathists and others, believe that this relation is to be sought in the curative action exerted by certain doses of drugs on *the diseased body*, of the precise symptoms which the same drugs produce on the healthy body. Now, whether this be so or not, it will be admitted by all that, since the science of medicine must rest on a comparison of pathological states and pharmacodynamical phenomena, our first endeavour must be to apply every legitimate method of scientific investigation to the determination of these subjects. Here we at once obtain a wide field for chemistry and several of the physical sciences. A comprehensive and exact knowledge of chemistry is requisite for the due examination of the animal organs, tissues and secretions, both in their normal state and when they have been altered by disease or drugs. The application of the microscope or spectroscope to such investigations as these demands scientific acquirement; it is hardly too much to say that these instruments are worse than useless in the hands of the ignorant. Magnetic and electrical phenomena also demand consideration. Although so long as we confine our investigations, with whatever care these may be conducted, to the determination of the properties of drugs *outside the organism*, we obtain scanty and uncertain indications of the therapeutic action of these substances, yet when we apply the same methods of research to assist us in determining the results of such bodies *within the organism*, we may so far advance to the very knowledge which is necessary to give medicine a scientific basis. In other words, while purely chemical laws (as generally understood) can rarely furnish us with any rule of therapeutic practice, their aid is indispensable in the cultivation of those more strictly medical sciences on the results of which any such law can be based.

In point of fact, so complex are the conditions of life, that very often the therapeutic action of drugs is the direct opposite of what we should *à priori* have expected. Thus we have the high authority of Buchheim, Ringer, Mavor, and Burness for the assertion that the administration of acids *diminishes* the acid secretions of the system, while the administration of alkalis produces a like diminution in the amount of the alkaline secretions.

It is fair to mention, with respect to chemistry, that this science has, in some isolated cases, afforded direct indications for medical treatment. The administration of lithia salts in gout, for example, was first suggested by the known solubility of urate of lithia; and attempts, not always very successful, have been made to utilise the solvent action of certain substances in the treatment of vesical calculi. In these cases, however, the treatment is merely palliative; all that is effected is at best the removal of a mechanical obstruction or annoyance, without remedying the constitutional diathesis upon which the development of the same depended. In this sense even the mechanical properties of drugs have been rendered directly available in the treatment of disease; as when a patient suffering from *ileus* was directed to swallow a quantity of quicksilver, in hopes of this, by its weight, overcoming the obstruction; and the vermifuge action of *mucuna pruriens* is usually ascribed to its mechanically irritating the intestinal worms. These exceptional cases ought to convince us that no *one* therapeutical law, however extensive, will probably ever suffice to furnish practical indications for the treatment of all the cases which come before us; and that the most satisfactory "scientific basis of medicine" will still, in practice, require to be supplemented by many subsidiary methods. Those who seek for a "universal law of cure" which shall supersede the need of any auxiliaries are scarcely wiser than those who seek for a panacea or an elixir vitæ. But, at the same time, those who do *not* look for the establishment of some distinct relation between pathology and pharmacodynamics—a relation existing in nature and not dependant on the attribution of imaginary "primary" or "secondary" qualities to drugs and morbid states—must, if they are consistant, despair of medicine ever passing out of the region of pure empiricism.

The "proving" of drugs on the healthy and diseased human subject is, I believe, the only process by which any such practical relation can be discovered, not only because it is only thus that the subjective phenomena can be fairly appreciated, but also because it is only thus that the conditions of the experiment correspond appreciably to the conditions of medical practice. Experiments on the lower animals are often misleading and never satisfactory, for many reasons, as, *e.g.*, the difference between their organisms and our own, the serious nervous complications induced by the severe sufferings to which the animals are often subjected, which must exert a disturbing influence on the secretions even when muscular contortions are paralysed by curari; the fact that what is given out by physiologists as the *natural* action of, say croton oil, rhubarb, or podophyllin, is in reality the action of one or other of those drugs, *plus* that of curari, on a morbidly painful condition, and the fact of the subjective symptoms being beyond our ken.

The bearings of such sciences as botany or natural history on medicine are even less distinct than those of chemistry and physics. It is difficult to see what direct bearing they can have on medical practice, unless, perhaps, in so far as the study of the phenomena of animal and vegetable life may, in some cases, suggest indications for the treatment of diseases of fungoid and parasitic origin. It was on this principle, for example, that the late Professor J. H. Bennett was disposed to maintain that the mere exclusion of air by means of oleaginous or fatty liniments would suffice to destroy the organisms from which so many loathsome skin-diseases arise. Botany *occasionally* gives useful hints as to the probable action of plants belonging to particular natural orders; thus none of the *cruciferæ* are poisonous, while a good many of them possess anti-scorbutic properties: a fact of which, it will be remembered, Captain Cook happily availed himself. Their abounding in nitrogen and sulphur, moreover, gives them special dietetic value. Again, the bark and root of most of the *rosaceæ* have astringent properties, and the *convolvulaceæ* are generally purgatives.

But there is another aspect in which botany and natural history may be regarded in relation to medical science—viz., as forming part of the science of general biology. While, as we have seen, it is with the subordinate department of pathology that we are more directly concerned in endeavouring to discover a law of drug-administration, it ought always to be borne in mind that the administration of drugs forms but *part* of a physician's duty. To the adequate study of pathology itself the previous and concomitant study of physiology is indispensable;[*] while the latter stands in as direct a relation to hygiene, dietetics, and so forth as the former does to drug-medication. And although the term "physiology" is now usually restricted to *human* physiology, this can only be philosophically studied as a department of biology, *i.e.*, of the science which treats of the phenomena observed in beings endowed with life, whether animal or vegetable. To all these, growth, nutrition, and some form of reproduction are common, and the careful observation of the conditions which favour or retard these processes in different cases, and of the connection of these conditions with the various forms of development occurring in different organisms, stands in the same relation to human physiology as the study of the general laws of chemistry to that to the operation of those laws as specially manifested by any particular class of bodies. To give merely a very general illustration, the study of comparative anatomy has enabled us to pronounce with tolerable certainty that the structure of the human teeth indicates a "mixed" diet as most suitable for human beings, while the striking phenomena of "etiolation" in plants may have served to enforce, if they did not suggest, the evil results likely to ensue from want of sufficient sunlight in the case of animals. These are very inadequate illustrations, I admit, but this is a theme on which, in the present state of science, it is unsafe to dilate too far. It is prudent to keep clear of the vagaries of the ancients, who maintain that we were indebted to the instructions of the lower animals for most therapeutical appliances: to the hippopotamus for the questionable boon of blood-letting, and to the sacred ibis for the use of clysters. The important *hygienic* value of botany is, however, unquestionable. Of this a very striking instance is recorded in the "Scientific Notes from Foreign Sources," published in THE CHEMIST AND DRUGGIST for April, 1877:—"Five years after planting the *Eucalyptus*, one of the most marshy and unhealthy districts of Algiers was converted into one of the healthiest and driest. Similar results have been reported from the Cape of Good Hope, Rome, Spain, and Portugal. . . . . This tree seems capable of drawing its necessary supplies of moisture from a considerable depth below the earth's surface, and exhaling great part of the same from its leaves, thus also moderating the aridity of *dry* climates. This, at least, seems to be the interpretation of Von Müller's prophecy that the cultivation of this tree would annihilate the rainless zone of the earth, and restore to Palestine its former fertility." The importance of flowers in dwelling-houses is acknowledged, but even yet there is not absolute unanimity among botanists as to the precise influence of plants on the atmosphere. It is very generally held that during the day plants absorb carbonic acid and eliminate oxygen, but during the night reverse this process; in the former case, of course, purifying the atmosphere, but in the latter deteriorating it. Mr. Haseldine Pepys, however (whose experiments have been in part confirmed by Cloez and Gratiolet), has convinced himself that at *no* time is carbonic acid disengaged from *healthy* leaves, and that the liberation of oxygen takes place, though more slowly, by night as well as by day.—(Balfour's *Class-Book of Botany*, 3rd edit., p. 471.)

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[*] Always bearing in mind that *subjective* no less than *objective* phenomena must be attended to, especially when these sciences are studied with a practical medical view.

What has been here said may serve briefly to indicate a few of the more immediate practical relations of some of the "allied sciences" to medicine. It is needless to dilate on the importance of mathematics to these auxiliaries, since all science tends to assume more and more of a mathematical form, and to find expression for many of its general laws in mathematical formulæ. But there is another aspect in which these "allied sciences" may be regarded; not so much with respect to their direct practical suggestiveness in affording specific indications for our daily medical work, as in themselves furnishing the most appropriate kind of mental gymnastic or preparatory training for minds which are to be afterwards devoted to strictly medical studies. And here their value is indisputable; far beyond that of languages, or history, or even mathematics. But, in order that they may be thus utilised, it is absolutely necessary that they should be pursued by methods of individual and original research, and not merely studied out of books. If books are to be our sole instructors, as Professor Huxley has well remarked, we had better omit science altogether and confine our attention to purely literary subjects, in which books are the appropriate means of teaching. I am not speaking without due consideration when I affirm that, for want of this preliminary scientific training, the first year of attendance on professional lectures is sometimes all but wasted, even in the case of diligent medical students, and such as perhaps surpass the average in general educational advantages. The turn or habit of mind which is adapted to receive and appreciate the truths of science, to interpret aright the utterances of nature, and to perceive the bearings of observed phenomena, to say nothing of the no-less directly practical attitude for the contriving and performance of a series of experiments in elucidation of any particular question, can only come from the custom of contemplating nature and her laws face to face, and not merely the imperfect and often distorted reflection of her image supplied by books—an image which, even when strictly accurate, is only seen by the mere reader through the eyes of another.

"The faculties which are called into active operation in the prosecution of experimental scientific research," remarked Professor Roscoe at the opening of Owen's College, Manchester, in 1873, "are, in fact, precisely those which are valuable in the ordinary occurrences of life, the proper employment of which leads to success into whatever channel they may happen to be directed. A man who has learned how successfully to meet the difficulties and overcome the obstacles which occur in every successful experimentation is able to meet and grapple with obstacles of a similar character with which he comes in contact in after life. . . . Even more directly does the value of high scientific education bear upon professional life. *The medical* man's success depends mainly upon the exercise of faculties which are pre-eminently called forth and strengthened in original scientific investigation."

I need not detail the various practical applications of chemistry, botany, &c., to pharmacy, because these are too obvious to need further reference. The above remarks were, in fact, suggested to me by a recent event: the fact of a French lady having, about a year ago, offered a valuable annual prize for the best essay on the relation of the allied sciences to medicine. The subject is one of great importance, and I have no doubt the lady's well-timed and judicious liberality will call forth many essays calculated to elucidate the point. But I cannot conclude without expressing my earnest wish that some equally public-spirited individual would offer a like premium for an essay on the importance to medical men and men of science of an acquaintance with general literature, *belles lettres*, and topics of specially human interest. I have no wish to declaim on this subject, or to ascribe to these or any other branches of secular instruction a value which they do not and cannot possess. That the hackneyed lines of Ovid, "*Ingenuas didicisse fideliter artes Emollit mores nec sinit esse feros,*" are far from universally true, is plain from the case of Professor Porson and from the conduct of some physiologists whose literary culture is second only to their scientific attainments. But in so far as secular education has any direct moral bearing, this is, *I* think, to be sought mainly in the literary and æsthetic, and little, if at all, in the purely scientific department. Admirable as is scientific research as a means of developing the intellectual faculties, I know of no moral attributes which it has much likelihood to foster except those of industry and caution—highly valuable qualities, no doubt, in a prudential aspect, but ranking comparatively low in the strictly moral scale. It has, indeed, long been customary to hold very different language, and to assert for science claims of the highest moral and even theological character. But to me these appear to have little foundation. Galileo, for example, said that the contemplation of a straw would suffice to convince him of the existence of the Deity; but this flourish can only have meant that the structure of even a straw suggests the idea of a Creator of sufficient intelligence to adapt means to ends; not necessarily of a moral Being deserving of religious worship. Galen, again, whose fondness for rodomontade was proverbial, said that he regarded his pursuit of anatomical science as equivalent to a hymn composed in honour of the Creator; a statement which has always reminded me of Mr. Pecksniff's assertion that "when he reflected what a beautiful process that of digestion was, he felt himself a public benefactor whenever he ate his supper." And Young's line, "An undevout astronomer is mad," has been criticised with equal severity and justice by O. W. Holmes in his "Poet at the Breakfast-table." Surely any direct moral improvement which purely secular instruction can supply is to be looked for from literature and æsthetics rather than from science. The two former may cherish and perhaps even awaken the faculties of sympathy and ideality; I hardly see what (in this department) can be expected from the latter better than an "enlightened selfishness," valuable as the results of science are to *material* prosperity. From its very nature the due cultivation of science demands the suppression of all emotions which might disturb the judgment; the investigation of any purely scientific question is to the full as unsympathetic a business as the determination of a lawsuit, and far more devoid of *human* interest. Surely, then, those persons whose leading occupation demands the suppression of all emotion, and detains them in a region where there is often no room for the exercise of the moral sentiments, ought to avail themselves of every possible means for the development of the higher part of their nature, such as the study of the "humaner letters"—history, biography, poetry, and the like. The humanising influence of such studies is, unhappily, too often quite inadequate; but it may be hoped that they would at least co-operate with higher motives in rendering the physiologists of the future more in harmony with the benevolent section of the community at large than has frequently been hitherto the case; while they might be the means of promoting an increasingly intelligent sympathy between members of the literary and scientific world, an increased mutual respect for each other's special studies, and a more generous co-operation and mutual helpfulness between all seekers after truth.

LEECH FISHING IN GREECE.

A STRANGE scene, according to M. Belle (writing in *Tour du Monde*), is to be witnessed on the borders of Lake Copios, near the site of the ancient Orchomena, in Greece. Ragged individuals are observed to enter the water up to their knees, and stand a short time among the rushes and reeds. Then they come out, sit on a stone, and scrape their legs, which are covered with black spots. They are leech-fishers. The fisher, in this case, is his own bait. For two or three months these miserable creatures, all foreigners, will make as much as twenty francs a day, and they spend about half of it in drink. A few individuals, however, at the end of the season, carry off considerable sums, but this class do not themselves enter the lake; they drive in old worn-out horses. Presently a trembling seizes the unhappy animal. He is then brought out, his legs and belly covered with a slimy mass of annelids. Staggering a few paces he falls on his side with contracted nostrils and leaden eye. The leeches are detached, and the horse is turned into the neighbouring waste land for four or five days in order to become a fresh victim. As the end of the season approaches, however, the horse, exhausted and considered difficult to sell, is at last not granted such respite. He is brought from the lake only for the time necessary for the removal of the leeches. He is not even allowed to eat, and his whole body is then delivered up to the hungry animals. M. Belle says he has seen even the eyelids disappear under a thick layer of leeches. Ere long the horse has not strength enough to drag himself out of the marsh, so he is brought out by the owner, scraped, and flayed while yet alive.—*Medical Press and Circular.*

FORMULÆ OF SECRET MEDICINES.

(*Continued.*)

The formulæ given below are translated (by special permission of the author) from a German collection compiled by Mr. Edward Hahn, Apotheker. The names following most of the formulæ are those of the authorities quoted for the analysis. The weights are almost invariably given in metric denominations. A gramme is equivalent to 15½ grains. The prices quoted are the nearest English equivalents to the original retail price.

AQUA AMARELLA.—A compound for hair-dyeing; is prepared with sugar of lead, common salt, and water.

AQUA VITÆ AROMATICO-AMARA (F. Bolle, formerly J. B. Claude, Berlin):—

	Parts
Galangal, ginger, āā	2
Orange berries, European centaury, gentian, cinnamon, angelica, āā	1
Alcohol	30
Water	26

Digest and filter; 210 grammes, 1*s.*—*Hager.*

AROMATIQUE (Albin Müller, Brünn):—

	Grammes
Spirit (90 per cent.)	50
Sugar	45
Extractive matter	4

(composed of cinnamon, cloves, galangal, zedoary, angelica, anise).

Water	81

Sold in wine-bottle shaped bottles, and recommended for all derangements of the digestive organs.—*Hager.*

AROMATIC SULPHUR-SOAP (Ed. Heger).—For cleansing the teeth and mouth. A hard sulphur coloured soap externally; on cutting, greyish-brown. Composed of soap with 10 per cent. of hyposulphite of soda, perfumed with a scent resembling oil of balm. 3*d.*—*Hager.*

ASTHMA CURE (Dr. Aubrée, Ferte Vidame, Eure et Loire' France):—

	Parts
Decoction of Senega (10 parts of the root)	250
Iodide of potassium	50
Extract of opium	4
Simple syrup	500
Weak spirit	200

Coloured with some cochineal tincture.—*Hager.*

According to a later analysis by Schröppel this remedy is thus composed:—

	Parts
Iodide of potassium	9
French lactacarium	1
Water	288
Simple syrup	48
Chloric ether	1½

Six bottles, each containing 200 grammes, 2*l.*

ASTHMA TEA (Dr. Orleïn).—Recommended for difficulty of breathing, dry coughs, loss of sleep, loss of appetite, &c.:—

	Parts
Licorice	8
Marshmallow root	6
Iceland moss	5
A sort of buckbean	2
Horehound	2

200 grammes, 3*s.*—*Schädler and Selle.*

ASTHMA CURE (Kubale, Klitschdorf, near Bunzlau).—This is a solution of iodide of potassium, bromide of potassium, and sugar in water, strongly coloured with a cochineal tincture containing alum. It is supplied in six bottles numbered 1 to 6. No. 1 being the weakest, and No. 6 the strongest in the iodide and bromide. In No. 3, for example, we found:—

	Grammes
Iodide of potassium	5
Sugar	2½
Alum	⅓
Cochineal colouring matter	½
Water	200

3 bottles, 15*s.*—*Hager.*

ASTHMATIC PASTILLES (S. Kittel's, now Daniel White & Co., New York).—Set fire to the pastilles and inhale the smoke. An analysis found in 100 parts:—

	Parts
Nitrate of potash	20·1
Impure resin of scammony	3·5
Gum and sugar	35·
Charcoal, plant-stems and leaves	40·7

—*Dr. Fleck.*

AUGSBURG EYE BALSAM.

	Grammes
Red oxide of mercury	·75
Extract of belladonna	·5
Tincture of opium	·5
Fatty substance	7

3*s.* 6*d.*—*Hager.*

EYE BALSAM (Müller, Berlin):—

	Parts
Red oxide of mercury	5
Opium	3
Unsalted butter	100

EYE BALSAM (Müller's Widow, Berlin):—

	Grammes
Red oxide of mercury	·2
Unsalted, usually rancid, butter	10

6*d.*

EYE ESSENCE (Dr. Romershausen).—A tincture prepared from fennel seeds and fresh young fennel. 250 grammes, 3*s.*—*Hager.*

VEGETABLE EYE BALSAM (Martin Reichel, Würzburg):—

	Parts
Opium	5
Oxide of mercury	5
Camphor	2
Wax cerate	52

4 grammes in a piece of calf's bladder, 3*s.*—*Hager.*

HOFFMANN'S OPHTHALMIC WATER (Hoffmann, Cologne).—A solution of one pint of sulphate of iron in 50 parts of rose water. 125 grammes, 3*s.*—*Opwyrna.*

EYE POWDER (Laeyson, Paris), also known as Odorons Powder.—For the strengthening, restoration, and preservation of the sight. A powder composed of—

	Parts
Burnt chalk	100
Ammonia	50
Charcoal	6
Oxide of iron	2
Cinnamon bark	2

A bottle containing 120 grammes, 5*s.*—*P. L. Geiger.*

EYE SALT.—Powdered alum.—*G. Graefe.*

EYE WATER (Biedermann, Annaberg).—2 grammes sulphate of zinc in 60 grammes distilled water, with a little infusion of cloves.

EYE WATER (Brun) is a solution of 4 parts of aloes in 32 parts of white wine, with 32 parts of rose water, and 1½ part of tincture of saffron.

EYE WATER (Chantomelanus) "makes spectacles superfluous." A turbid yellow-brownish liquid, consisting of a weak extract of lavender flowers in diluted spirit, in which some oil of lavender has also been dissolved. 10 grammes, 6*d.*—*Opwyrda.*

DR. GRAEFE'S EYE WATER (L. Roth, Berlin)

	Grammes
Sulphate of zinc	1·5
Fennel water	100

slightly coloured with fennel seed tincture. 3*s.*—*Schädler.*

Eye Water (J. P. H. Hette).—A solution of etherial oils of lavender, bergamot, rosemary, and tincture of opium in spirits of wine, 50 per cent. 60 grammes, 1*s.* 6*d.*—*Wittstein.*

Eye Water (Bernhard Kraft, Calbe) for acute inflammation of the eyes and for strengthening the sight. Seven grammes of an impure muddy sediment-leaving spring water containing half a gramme of native sulphate of zinc containing iron. 1*s.* —*Schädler.*

Eye Water (Inspector Stroinski, Neisse).—One part of sulphate of zinc dissolved in 500 parts of common river water. 40·50 grammes, 1*s.*—*Schreiber.*

Once a *trace* of patchouli perfume was added to this water.—*Hager.*

Dr. White's Eye Water (T. Ehrhard, Altenfeld, Thuringia). —Four cloves, a piece of cinnamon the size of a large pea, two teaspoonfuls of rose water, 1 drop of vinegar, 10 drops of arnica tincture. Digest for an hour and filter. Dissolve in the filtrate some white vitriol of the size of a pea.—*Hager.*

	Parts
Sulphate of zinc	3
Honey	4
Water	80

Perfumed with oil of cloves and a trace of mustard oil. 50 grammes, 1*s.*—*Wittstein.*

Aurora Pomade.—For promoting the action of the skin. Cocoa butter with orris.

Auxilion.—A packet of small plasters for the painless and radical cure of corns. Each plaster is to be worn for about a week, and then the horny pustule is to be removed with a sharp knife. The plaster is a compound of one part of resin plaster, and 2 parts of lead plaster, and is likely to promote the removal and solution of the thick skin of the corns. —*Hager.*

Ayer's Pills.—Sold in long wooden boxes, each containing 25 pills, covered with sugar and starch, and composed of pepper, colocynth, gamboge, and aloes.—*Hager.*

American Baking Powder.—For making light pastry. Tartaric acid and chalk.—*Reichardt.*

Borwick's German Baking Powder is an artificial fermentation powder, compounded with coarse maize-flour.—*Gädike.*

Goodall's Baking Powder is a compound of 2 parts of rice flour, with 1 part of a mixture of tartaric acid and bicarbonate of soda.—*K. Boschan.*

Prof. Horsford's Baking Powder or Yeast Powder (Cambridge, U.S.)—This is a powder supplied in two packets. The one contains an acid phosphate of lime and magnesia made up with a certain quantity of flour, and the other is bicarbonate of soda, with a little muriate of potash.

Aromatic Malt Baths (J. Hoff, Berlin).—Wittstein says these consist of coarsely crushed barley malt at six times its selling value.

Bahr's Non-poisonous Medical Snuff.—A snuff largerly advertised in the Berlin journals, composed chiefly of powdered galls. 24 grammes, 6*s.*—*Hager.*

Balm of a Thousand Flowers.—Chandler says this is a thick yellow emulsion, free from injurious metallic ingredients.

Balm of White Lilies, for preserving and beautifying the skin (H. A. Hoadley, New York).—This, also according to Chandler, is a red-coloured water containing a large quantity of chalk in suspension, but with no injurious metallic ingredient.

Berlin Balsam, for burns, cuts, bruises, and wounds of every kind, sores and ulcers, frost-bites, &c.—Chloride of lime with impure glycerine. 60 grammes, 1*s.* 6*d.*

Balsam Bilfinger, for rheumatism and gout:—

	Grammes
Black soap	25
Water	40
Spirit of wine	10
Camphorated spirit	10
Liquor ammoniæ caustic	20
Tinct. capsici	5

2*s.* 3*d.*—*Schädler.*

Professor Cook's Balsam of Life.—Recommended especially for toothache and skin diseases.

	Parts
Borax	20
Boiling water	250
Camphor	1½

—*Hager.*

Poser's Balsam (E. Gross, Breslau) for chronic and local rheumatism.—A yellow liquid, composed of:—

	Grammes
Oil of rosemary	4
Camphor	10
Tincture of ants	15
Tincture of cantharides	5
Spirit of wine	90
	Drops
Tincture of saffron	10

4*s.*—*Hager.*

Potsdam Balsam (aromatic balsamic perfume):—

	Grammes
Liquid storax	4
Cloves	2
Oil of cloves	3
Oil of cassia	1
Oils of bergamot, lemon, and lavender, āā	2
Oil of curled mint	¼
S. V. R.	200

macerate and filter. 85 grammes, 1*s.*—*Hager.*

St. John Long's Balsam (liniment), used for application to the chest in cases of phthisis, is a thick emulsion composed of

	Parts
Turpentine	25
Yolk of eggs	50
Concentrated vinegar	5
Rose water	15

and a few drops of essence of lemon.

Balsam St. Genevieve:—

	Parts
Thick turpentine	5
Olive oil	30
Beeswax	25
Spermaceti	5
Camphor	1
Red Sanders	4

Tape Worm Cure (Bloch, Vienna).—Coarsely powdered pomegranate root bark, 125 grammes, boiled for half an hour in 800 grammes water. To this add solution of ammonia 5 grammes; boil again for a quarter of an hour. Add kousso flowers 25 grammes. Again boil for a few minutes, and when cold add citric acid 1 gramme and alcohol 30 grammes. Press, filter, and set aside. The product should weigh about 500 grammes. Klinger says this remedy is merely a concentrated essence of pomegranate root bark, and contains neither ammonia nor citric acid.

Tape Worm Cure (Jacoby, Berlin).—A box containing 20 grammes of kousso powder and directions for use. 6*s.*—*Hager.*

Tape Worm Cure for Children and Adults (E. Karig, Berlin):—

	Gramme
Burned oxide of copper	1
Cassia powder	1½
Sugar of milk	10

Divide in 24 powders. 3*s.*—*Schädler.*

Tapeworm Cure (Mix).—(*a*) A mixture containing 3 decigrammes of sulphate of quinine, with a few drops of hydrochloric acid to dissolve it in 200 grammes water. To be taken in the course of three days. (*b*). A box with 12 grammes kousso powder. A teaspoonful to be taken each morning in black coffee. 4*s.*—*Schädler.*

Tapeworm Cure (Richard Mohrmann, Frankenberg, Saxony). —This Mohrmann travels about in the fashion of the old charlatans, to sell his medicines. These consist of two varieties, the first being 10 grammes of extract of male fern, the second a mixture of 8 grammes each of raspberry juice and castor oil. These remedies have been used for tapeworm for almost 100 years. The doctor's directions for use, are to mix 30 grammes of the extract with the castor oil and raspberry compound, and 30 drops of the mixture to be taken every quarter of an hour, until purging occurs.

Tapeworm Cure (Mork, Berlin).—A decoction of about 110 grammes of pomegranate root bark, yielding 400 grammes of liquid, and mixed 1 gramme of extract of male fern. The directions order that on one day one or two tablespoonfuls of castor oil should be taken, a herring salad in the evening, and the following morning, after coffee, a third of the contents of the bottle, another third half an hour later, and the remainder in yet another half hour.—*Hager.*

Laffon's Tapeworm Pills are compounded of the etherial extract of the root of Aspidium Lonchitis, Asp. Helveticum, and Asp. Filixmas, together with the alcoholic extract of the flowers of Achillea mutellina and maschata, and the powder of the flowers of Arnica Doronicum. 120 pills, 9*s.*—*Wittstein.*

Peschier's Tapeworm Pills.—Etherial extract, and powder of the rhizome of male fern, of each gramme 1·6 make 20 pills. Take ten at night and ten in the morning.

Errata.

Mr. T. Greenish has kindly pointed out that in the formula for American Schampoo Fluid, the line "with a little tincture of cantharides" has been omitted. Also that in the second recipe, "Dr. Delfer's" should be "Dr. Oelfers."

Hahn also sends us a few additions and corrections which do not appear in his original work:—After the formula for "Acetine," add "Wadding to be soaked with the liquid and laid on."

After "American Maple Sugar," add "a trace of carbonate of soda is usually mixed with this."

Algophon—for 2 grammes read 4 grammes.

Mr. Hauber's Stomachic Bitters.—For 50 parts of water, read 58 parts.

To Anatherin Balsam add another formula published by the Netherlands Society:—

Tinct. Myrrh	160 grammes.
Tinct. Catechu	80 "
Tinct. Guaiacum	
Tinct. Rhataniæ, āā	40 "
Tinct. Caryoph.	30 "
Spirit. Cochleariæ	20 "
Ol. Cassiæ	20 drops.
Otto rosc.	1 drop.
Spirit, 50 per cent.	630 grammes.

NAMES OF BRITISH MEDICINAL PLANTS.

By W. G. Piper.

Hyoscyamus.—3.

In the two preceding articles we have pointed out (1) that the explanation of Hyoscyamus as meaning hog-bean is untenable; (2) that there is an older form—Dioskyamos—meaning bean of the gods; and (3) that this plant has many other names which connect it with divine and supernatural beings. Of these facts there is no doubt. But the link which binds the plant to the gods is not so evident. It is probably found in its narcotic and delirium producing powers. Every schoolboy knows that one of the most celebrated oracles of the ancients was situated over a natural crevice in the soil, from which issued a stream of carbonic acid gas. When the oracle was interrogated the officiant ascended a stool placed over the crevice, and remained there until the deadly vapour had produced partial insensibility or mental alienation. No reply was given to the most urgent interrogations until this condition was attained. There seems no reason to doubt that the ancients and many modern nations in a low stage of civilisation believed, and still believe, that madness is caused by the indwelling of some supernatural being, call it devil or god, as you please. It is well known that all persons with deranged intellect were treated by the ancients with the greatest respect and consideration, even while no attempts were made to procure their restoration to sanity. Such attempts, indeed, would have been considered impious. The consideration and neglect of the ordinary means of cure were alike due to the belief that the man is for the time the dwelling place of a Divine or Satanic spirit. An incident mentioned in the Acts of the Apostles illustrates both this belief and the value attached to the utterances of demented persons.

It will be remembered that on one occasion the Apostle Peter healed a girl who had followed him several days, "prophesying." This act excited the ire of her masters, and they endeavoured to get the Apostle and his companion punished for healing the girl, for before they had had much gain by her. She was evidently regarded as possessing supernatural knowledge, and was consulted by the populace to tell them their fortunes.

If the natural permanent state of dementia were valuable, we can easily understand that any means which would enable a man to assume or put off that state at pleasure, and would allow him to proceed with his ordinary work in the intervals, would be of much greater worth.

The explanation which would naturally be given of such a phenomenon is that the means employed brought the god or spirit from his own place and compelled him to enter the man. Under such circumstances, what is more likely than that the means, whatever it might be, would receive some name linking it with the gods whose presence it was supposed to command?

We have not been able to prove that the Hyoscyamus was at any time used alone for this special purpose. In the few passages we have found in which the plant used to produce this temporary insanity or intoxication is specified the Hyoscyamus is not mentioned. It is probable that the priests would endeavour to keep such knowledge to themselves, and would mention the materials they used under vague and general terms. This idea is largely supported by the confusion existing among the names of the Indian Hemp, the various species of Solanaceæ, and a few other plants which possess similar properties. We argue that as the Hyoscyamus is known to be a powerful agent in producing temporary mental alienation, as it is a common plant in both Italy and Greece, as there is much confusion among the names of the common vegetable narcotics, that therefore it is probable that the Henbane was used by the priests either alone or in combination to produce that state which was supposed to indicate the presence of the god, and that in this fact we have the true explanation of the name Hyoscyamus.

The confusion we have mentioned can be easily illustrated. The French word Endormie is applied both to the Henbane and Stramonium. Its meaning and origin are self-evident. In some of the French provinces they say of a sleepy-looking or dull-witted, man he has eaten l'Endormie. The name Strychnos, originally applied to some unidentified species of Solanum, was then given loosely to the Atropa Belladonna. But in the Anglo-Saxon translation of the herbal of Apuleius, the name Strychnos is given to the Fox glove. Strychnos is perhaps from the Greek Strochnnymi, to overthrow—in allusion to the narcotic properties. Others suggest that it is from the Greek Strycho, to torment—"from its properties of producing insanity." The name Apollinaria even occurs in some works, with the meaning of night-shade or bane-wort, that is, Atropa Belladonna. Apollinaria Minor is said by some to be the Henbane, and by others to be the Belladonna, while in the Anglo-Saxon herbal, just quoted, Apollinaris is identified with the Lily of the Valley. In the Latin Apuleius, Apollinaris is the Mandrake. Pythonion is a name given the Henbane in Greek, which points to its use by the Python. But this name is also applied, according to Mentzell, to the Veratrum Album. Bellonaria is the herb Night-hade, and the Bellonarii are the priests of Bellona, the Goddess of War.

Solanum Maniacum is a name for the belladonna, Mania of the henbane, and Manicos in one work is given to the Fox-glove. Among Eastern nations we have several similar names, which are variously transliterated. Bang and Beng are Hindoo and Arabic for Hyoscyamus. Bang is Hindoo and Persian and Ben, Burmese for Cannabis Indica. Bezr-ul-beng is Arabic for Hemlock, and Buz-ir-ul-bung for Henbane. Boosa is Hindoo for Papaver Somniferum and Boose is Persian for Cannabis. Bung is both Henbane seed and Cannabis Indica and Bung-deshtee is Stramonium. Bung is Persian and Arabic for Henbane and Bunga-pion for Papaver Alba. These are some of the names which have occurred without a special search being made for them. They are sufficient to prove that the confusion we have indicated really does exist. To sum up, Hyoscyamus is derived from an older form—Dioskyamos—recorded by Dioscorides. This word means Bean of the Gods, and the plant is perhaps so called because of its narcotic properties, which fit it for producing that temporary madness supposed to indicate the presence of some supernatural being.

Henbane, &c.

Henbane for at least eight centuries has been the common English name of the Hyoscyamus. The usual and seemingly self-evident explanation is that it means hen poison. But as in so many other cases, it is very difficult to explain this explanation. Hens do not eat this plant. The people who first used the name were not vivisectionists, and even if they had been, hens would not have monopolised their attention just as they do not monopolise the susceptibility to the effects of the poison. So it still remains a puzzle why it is Henbane and not Dogbane or Cowbane. It is true that we find old scientists making experiments intended to explain the name. One Bonaventura Vulcanius tells us that he onced pricked the comb of a cock with a needle poisoned with Henbane, and that the cock at once leaped in the air and fell dead. Without disputing the facts the old experimenter brings forward, the mere fact that experiments were wanted shows us that the name needed explanation so much as three centuries ago.

The word has comparatively few cognates, and as most of them can be traced to this word as their original source they do not give us much help in explaining it. In early English manuscripts written soon after the Conquest we find the three forms, Hennebelle, Hænnebelle, and Henbane. The two former words are of four syllables, and also occur in Anglo-Saxon MSS, of still earlier date. Hennebell and Hennethol are other Anglo-Saxon names. Later English forms are Henbayne, Hennebone, and Henné-bane. In early French we have Henebane, Hanebane, Hannebeere, Hannebane, and Hanibane. These, by almost every author, are referred to the English word as their source, and that is explained as poison to fowls. Ménage says of it, "It is poison to fowls so that they die if the seed given them to eat be imbued with it." In support of this explanation several French names are brought forward, but they are so evidently translations and adaptations that their evidence becomes worthless. These names are Mort aux oyes (goose poison), Mort aux oisons (gosling poison), Mort aux poules (hen poison). The process by which Hannebeere (the commonest of the French forms of the word) could be produced from the English Henbane is not quite evident. Still we may safely assume that what explains one will also explain the other.

English etymologists have with striking unanimity avoided the word. Lemon, however, derides the usual etymon both of Henbane and Hyoscyamus, and proposes another. Hyoscyamus, he says, should be Ioskyamus, with the meaning of poison bean. And hence "Henbane should be more properly written Hionbean, or Ionbean (transformed into Henbane), to signify baneful bean." We doubt Mr. Lemon is not very logical; for what will explain Henbane may not explain Henbelle, and as the latter is the older form it should have our first attention. He does not attempt to find any traces of the extinct form in the pages of old books. He derives a purely Saxon word half from a Greek and half from a Saxon source, and lastly he assumes that the man who translated Kyamos into bean did not know enough Greek to translate Ion into poison, but that having accomplished the translation of half the word, he left the other a monument of his own ignorance and a stone of stumbling to the common folk, though how the latter came to adopt the word is left unexplained. If we explain Henbane as hen poison we must explain the older word Hennebelle as a hen's bell. Hens, as a rule, do not follow the fashion of the lady who rode to Banbury Cross and wear bells on their toes, nor does any part of their bodies resemble bells in any striking manner. It might be said that the plant itself supplies the idea of bells, and the connection with hens is due to the habitat,—that both hens and Henbane frequent the same localities. But this is not the fact.

Dr. Prior, in his popular names of British plants, suggests another explanation in which the charm of novelty is enhanced by that of plausibility. In the first place he reminds us that in mediæval Latin the plant is called Symphoniaca, or more properly Symphoniaca Herba. This name means not only the Herbane, but was primarily the name of a musical instrument. It is closely related to the word Symphony, and in its original Greek gives the idea of several sounds uniting in harmony, or of several musical instruments sounding together.

One form of the Symphoniaca was that of a curved rod, having suspended from the concave side a number of small bells. Doubtless these bells were at times made of different sizes, so that their tones would vary. This was used by shaking the rod when the bells chimed together. Every one acquainted with the Henbane must see at once how apt this name is. The persistent calices assume, when ripe, just such positions as an artist would seize to show that the bells were swinging. Symphoniaca at least is easy to be understood.

It is equally clear that hanging bells (Saxon, Henge-belle) would be an expressive name not only for this instrument, but also for the plant. We do not find the word in dictionaries, but we do find Hennebelle; and a very few experiments will convince our readers that the latter is a very easy and natural corruption of the former. So easy is the change that for our own part we have no hesitation in adopting this explanation of Henbane. To state it in a few words, Henbane is a corruption of Hennebelle, which is a corruption of Hengebelle, meaning hanging bells. The name is analagous to the low Latin name Symphoniaca, which was also applied to a musical instrument, consisting of a curved staff with bells hanging from it. The change of Hennebelle to Henbane is a great one, but the incomprehensibility of the latter helps us to understand its possibility. The common people forgot, and the conquering Normans had never known the meaning of the older word, so they changed it into others whose meaning seemed to be plain. The people will have an etymology whether it be right or wrong (witness Sweetheart, which has nothing to do with hearts, but is Sweetard, something very sweet, *ard* being an augmentative affix). So they made Hennebelle into Henbane to their own satisfaction and the confusion of their descendants.

We have already explained the Spanish name Velenho. There is little doubt that it really refers to the Celtic god, Belenus. But another explanation has been offered. Ménage says it is perhaps from the Latin word Venenum, or the Greek Belenion, with the meaning of arrow poison. The Spaniards, he tells us, called this plant Yerva del Ballestro, or herb of the Arbalastiers, because they used it for poisoning their missiles. Others adopt the same ancestry, explaining Velenho, however, as simply poison.

The Anglo-Saxon Belene, though undoubtedly identical with the German Bilsenkraut, and that with the Spanish Velenho, is differently explained by the Rev. O. Cockayne. He would make it mean the bell wort—suitable enough, but we think not quite correct. "Belle," he says, "is a bell; Bellen, furnished with bells, and the final 'e' is the usual final distinctive form of the names of worts." There is no suggestion that Belene is a corruption, so that it remains to show how the duplicate "l" was dropped, and the corresponding difference in pronunciation made in a legitimate manner.

According to Paphias, the common people formerly called this plant Milimandrium, "because of the elevation of mind which it produces." From Milimandrium doubtless comes the Spanish Meimendio. Pliny tells us that the plant is called Altercum and Altercangenon by the Arabs. By Apuleius it is called Altercullum; Scribonius Largus says it is so called because whoever drinks it will have a heavy head, his veins will be distended, and his mind alienated, "cum quadam verborum altercatione," so that his words will quarrel with each other.

Another name is Calicularis, or more properly Calicularis Herba. The epithet is derived from Calyx, a cup, and the title means the herb of little cups.

The last names of much importance are Worm Seed, and its companion Toothache Seed, which are given to the Sem. Hyoscyami of the shops. The use of the plant for toothache is respectably old. "Apuleius de viribus herbarum" recommends the root boiled in wine to relieve the pain of tooth-ache. In the "Grete Herball," a printed quarto, date 1526, the name Worme Sede is given, and sufferers from toothache are told to inhale the fumes arising from the seeds thrown on burning coals. This, it is said, will cause little worms to fall out. The true explanation of these little worms has been given by Mr. J. C. Thresh in this journal. When the seeds are sharply heated the curved embryos are expelled, and these so much resemble worms that they have given rise to the idea that worms have fallen from the teeth.

A few of the popular German names are interesting. Thus we have Schlafkraut, sleep wort; Tollkraut or Dollkraut, mad wort; Teufels-auge, devil's eye; Rindswurz, wild ox-root; and Zigeunerkraut, gipsy wort. The true explanation of some of these still remains to be discovered.

BROKEN BOTTLES.

THE question as to what becomes of the oyster and the cockle shells has long ago been solved. They are pulverised and used up for several useful purposes. The crushed cockle shell is invaluable as a bed on which to rest flower-pots in the conservatory or forcing-house, and the oyster shell makes capital gravel for garden walks and "rubble" for builder's purposes. What becomes of all the pins is a question more difficult to answer. Millions of these useful objects are daily manufactured, and yet the demand goes on increasing. Export orders cannot possibly keep pace with the supply, and consequently the number absorbed for home consumption must be something fabulous. But what becomes of the broken bottles may well be asked. Thousands of tons of bottles are broken every year in London alone, and the difference between the value of the sound and the broken bottle must amount to something very considerable. Broken "wines" and broken "sodas" are converted to many useful purposes, the latter especially. The best soda-water bottles come from Yorkshire, and the "gingers" from Derbyshire. The sodas are no longer sent to the metropolis packed in crates as formerly. In the crate they were pilfered, to a great extent, *en route* to their destination, and the cost of carriage was higher. They are now transmitted in bags made of coarse canvas and packed in layers of straw. Each bag holds eight dozen. The broken bottles are subsequently utilised for the manufacture of cheap jewellery, chimney ornaments, and inferior household glass for the manufacturing districts. They are also used for the manufacture of emery powder, glass paper, &c. Some idea of the number of "sodas" broken in the processes of filling, corking, cleaning, and distributing, may be gathered from the circumstance that one great mineral-water manufacturer (Mr. H. D. Rawlings) sold last year 100 tons. The value of the "motal," as it is styled, is somewhere about 10*s*. per ton, but it varies according to the demand. When the market for "fancy goods" is active, broken bottles command a better price. A revival of trade sets this particular industry in motion, along with others, and broken bottles are enhanced in value. In fact, broken glass and broken pottery serve many purposes, though it is only lately that economical science has learned how to turn them to account—*Globe*.

THE CHEMICAL SOCIETY.

Thursday, January 17, 1878.

DR. GILBERT in the chair.

It was announced that a ballot for the election of Fellows would take place at the next meeting of the society (Feb. 7).

The following papers were read:—

"On the Luminosity of Benzol when burnt with non-luminous Combustible Gases," by E. Franklaud and L. T. Thorue. After many unsuccessful attempts to burn benzol with a smokeless flame, the authors determined the luminosity of benzol vapour after dilution with hydrogen, carbonic oxide, and marsh gas. These gases were passed through a benzolizer, kept at a constant temperature, and burnt in a fish-tail burner. The following results were obtained:—1 lb. av. of benzol gives, when burnt with hydrogen, the light yielded by 5·792 lbs. of spermaceti; with carbonic oxide, that of 6·100 lbs. of spermaceti; with marsh gas, that of 7·7 lbs. of spermaceti. The authors point out that this difference is probably due in part to the different pyrometric thermal effects of the gaseous mixtures.

"On the Action of reducing Agents on Potassium Permanganate," by F. Jones. Hydrogen reduces permanganate, sesquioxide of manganese being formed. Ammonia produces, in addition, a nitrate a nitrite and free nitrogen. Phosphine arsine and stibine give somewhat similar reactions. Oxalic acid forms manganese sesquioxide, carbonic acid, and oxygen. Strong solutions of permanganate and manganese chloride, when mixed, form sesquioxide of manganese, chlorine and oxyen being evolved.

"On the Action of Sulphuric Acid on Copper," by Spencer Pickering. According to the author there are only two primary reactions in one of which copper sulphate, sulphurous acid, and water are the products, in the other, subsulphide of copper, copper sulphate, and water are formed. The author has studied the action at various temperatures, and has investigated the quantity of sulphuric acid actually used, the effect of an electric current, the action of impurities in the copper, the variations produced by diluting the acid, &c.

"On the Analysis of Sugar," by G. Jones. The author proposes to estimate sucrose volumetrically by adding a 0·1 per cent. solution to a boiling decinormal solution of permanganate, acidulated with sulphuric acid until the dirty-brown hydrated peroxide of manganese which is at first formed is reduced and dissolved.

"On the Decomposition Products of Quinine," by W. Ramsay and J. Dobbie. The authors oxidised quinine with permanganate, and obtained a new acid which they have identified with Dewar's dicarbopyridenic acid and a red amorphous substance. The acid was obtained by oxidising Marchand's quinetin.

The Society adjourned to February 7.

Thursday, February 7, 1878.

DR. GLADSTONE, President, in the chair.

The following papers were read:—

"On the Alkaloids contained in Aconitum Ferox," by Dr. Wright and Mr. Luff. The alkaloid pseudaconitin from aconitum ferox forms crystallised salts with difficulty. Aconitin from A. Napellus on the other hand crystallises with facility. When acted upon by saponifying agents, pseudaconitin is converted into dimethyl protocatechnic acid and a new base pseudaconin. Mineral acids saponify pseudaconitin. Tartaric acid forms the anhydroderivative apopseudaconitin. With glacial acetic and benzoic acids an acetyl and a benzoyl derivative are respectively formed. The properties, constitution, &c., of the above substances have been investigated by the authors. The nitrate and the gold salt of pseudaconitin were obtained in the crystalline form.

"Notes on the Tannins," by Dr. Paul and Mr. Kingzett. The authors conclude that (*a*) the supposition that natural tannin from gall nuts is a glucoside, is doubtful; (*b*) the astringent principle common to cutch and extract of mimosa bark is shown to be a glucoside, and to yield on decomposition, unfermentable sugar and a peculiar acid distinct from gallic acid.

"On the Estimation of Phosphorus in Iron and Steel," by E. Riley. The author has instituted a series of experiments as to the relative value of the molybdate and magnesia processes for determining phosphorus. As a general result he concludes that the mobybdate process always give results which are too low, and that the magnesia method is the only one to be trusted.

"An Inquiry into the Action of the Copper Zinc Couple on Alkaline Oxy-salts," by Dr. Gladstone and Mr. Tribe. The action of the couple on these oxy-salts is of an electrolytic nature, nitrites and ammonia being at first formed, but ammonia being the final product. When nitrates are taken chlorides are formed, when chlorates are decomposed no chlorates or hypochlorites could be detected. When ammonium nitrate is acted on at the boiling point, nitric oxide is evolved.

"On a New Method for the Determination of Boiling-Points," by H. G. Jones. A glass tube 4 m.m internal diameter, and 200 m.m long is bent into a **U**, so that one end, which is open, projects 15 m.m beyond the other, which is closed. The closed leg is filled completely, and the open leg partly, with mercury, and a bubble of liquid manipulated into the closed end of the **U**. On immersing the **U** in a paraffin bath and heating the latter the liquid boils, and the temperature at which the levels of the mercury in the two limbs are equal is the uncorrected boiling-point of the liquid.

The Society then adjourned to February 21, when a lecture on "Laboratory Experiences on board the *Challenger*," will be given by Mr. J. Y. Buchanan.

Pharmacy Abroad.

NEW YORK.

THE American journals record some considerable excitement in the drug trade of New York. The trouble began by the collapse of Mr. Edwin J. Dunning, jun., a prominent broker of that city, with liabilities exceeding half a million dollars. Following this, and in consequence of it, occurred the suspension of the great patent medicine house of John F. Henry, Curran & Co., and of Hegeman and Co, extensive retailers on the Broadway.

Then followed Donner and St. John, an old established firm of drug brokers, and Day, Hoagland & Stiger, wholesale druggists. In addition to these, reports were current that one or two other prominent drug houses would suspend, and for several days the drug market was in a feverish condition. There is good reason to believe that in some of these cases (we especially allude to the two first-named), the difficulty will be only temporary. We have no acquaintance with the other firms, and therefore cannot speak either way.

MONTREAL.

THE PERCENTAGE SYSTEM.

The following remarkable letter was published in *The Montreal Star*, of January 7:—

THE PERCENTAGE SYSTEM.

To the Editor of "The Star."

Sir,—About five years since several of the druggists in Montreal, with the assistance of the press, strove to put down a system of favouritism which then existed between several of the leading members of the medical profession and a favoured druggist of this city; these efforts have not only proved a failure, but to-day such a power is wielded by the majority of the medical men over the minds of the public, especially over the minds of the ladies, that all ordinary or even extraordinary efforts cannot disabuse their minds of the *farce* that out of over forty licensed druggists in this city "there is *only one* where a doctor's prescription can be compounded." What during the past five years has been the result of this practice? No less than four highly respectable qualified chemists and druggists, whose well stocked stores were in the centre of the city, three at the corners of the principal streets, and one on St. James-street, have become insolvent; and to-day it is only by the sufferance of my creditors that my place of business is not closed. It is now over twenty-three years since I commenced business for myself, and for several years I think I can say that I had as large a dispensing and family trade as any other druggist in this city; but from a year or so after commencing, I found that the percentage system was sapping the life out of my business. The first notable instance I call to mind was that of a highly respectable family that opened an account with me in the year 1855; at the close of the year 1857, a member of the family was ill, the medical man was called in, my customer was directed away from me, and I not only lost my interest in compounding the medicine, but I lost my customer altogether; the accounts for 1855, '56, and '57 would average about forty dollars a year, *and not over five dollars for medicines in the whole.* This is only *one* out of nearly the whole of my family accounts that I have lost in the same manner. At the time when my business was prospering, I kept not less than three qualified assistants, and I defy the medical men or the public to prove that prescriptions compounded at my store were not dispensed with as much care, and with as pure drugs and chemicals, as at any other establishment. Upon removing to my present business stand, in the immediate neighbourhood of wealthy families, it is all of no use; the same rule exists, and I find that new customers are surreptitiously directed away from me as heretofore, and the prescriptions brought to me from the few first-class family customers who have for the whole twenty-three years stood by me, with other respectable old customers, are all, without exception, directed away from me. I now ask, through the press, what can be done? I fearless assert that this practice here complained of was inaugurated in Montreal upon the percentage system, and that one-third or $33\frac{1}{3}$ per cent. was given to the medical men from the price charged for the medicine; to-day I am informed that one-fourth or 25 per cent. only is given. I have also been informed, and that upon reliable authority, that an average of percentages has been taken and a bonus of several hundred dollars a year has been given to some of the leading medical men for their patronage. The right of medical men to make any arrangement they choose with one or more druggists to compound their prescriptions, I do not wish to argue *pro* or *con;* what I wish to impress upon your mind, and upon the mind of an intelligent community, is this fact: that while this exclusive system continues no dispensing chemist or pharmaceutist, let him be ever so fully qualified in the art of dispensing or of pharmacy, with all the appliances for successfully carrying on a respectable family drug business, unless he has recourse to means which are in the highest sense degrading and unjust, cannot succeed Before closing I would say that there exist among us some medical men strongly opposed to this demoralizing system.—Yours very truly, John Gardner.

The Poison Cupboard.

A washerwoman, at Courcelles, has just died in a most extraordinary manner. She was suffering from the toothache, and applied, with a sponge, to her gums some of the bleaching liquor used in her trade. The application caused a spasm of agony, in which the sponge was half swallowed, and stopping in her throat, choked her before aid could be procured.

Pollution of Rivers Extraordinary.—The *Chemical News* tells us the following extraordinary fact on the authority of a German dyers' journal:—It appears that on November 10 7 cwt. of arsenic were plunged into the Rhine by the sinking of a vessel between Vallendar and Bendorf. The daily papers, so anxious as regards dyes supposed to contain traces of arsenic, take this accident very coolly.

In the French Journals we find a report of a trial of a M. Champion, a pharmacien of Paris, who was alleged to have occasioned the death of a young girl by sending to her by inadvertence a bottle of chloroform instead of syrup of buckthorn as prescribed. The chloroform was used as a lotion, and at the inquest the deceased was found to have died from the absorption of the same. But surely the physician did not order syrup of buckthorn as a lotion? The pharmacien tried to show that the error was due to the messenger taking up the wrong parcel from the counter, but the Court decided against him. The pharmacien had to pay 200 francs penalty and 1,500 francs damages to the mother of the deceased.

The three following cases are abstracted from reports in the *Medical Times and Gazette:*—

Poisoning by Liq. Amm. Fort.—On October 14, 1877, W. W., aged one year and eight months, seized a bottle containing liq. ammon. fort., swallowing part of it. The child at once cried out and fell to the ground, and was found breathing hurriedly, and blue in the face. The membranes lining the mouth and throat were much congested, and there was great difficulty in swallowing, with frequent vomiting. Dilute acetic acid was freely administered, with an enema of brandy and milk. Convulsions came on in the night, and the patient died next day at 1 p.m. in the Sheffield Public Hospital.

Poisoning by Chloroform.—At the Royal Free Hospital on October 20, 1877, C. McK. A., a quack doctor in distress, was admitted. He had taken $1\frac{1}{2}$ oz. of chloroform three-quarters of an hour before. He walked to the hospital, but soon after became unconscious. The stomach pump extracted a quantity of fluid smelling of chloroform. Artificial respiration, amyl nitrite, and enemas of sp. ammon. arom., with other stimulants, brought him to consciousness early on the 21st, but at 8.45 p.m. he suddenly fainted and died.

Poisoning by Bitter Almonds.—Dr. Hunt reports a case which was brought to the University College Hospital. A. J., a boy three years old, had taken several bitter almonds from his mother's shop and eaten them. Within half-an-hour he was brought to the hospital quite unconscious and with his limbs so stiff that his mother thought he was already dead. An emetic of sulphate of zinc was given, followed by the mixed oxides of iron. Vomiting was excited by thrusting the finger down the throat. Soon after the child slightly rallied, but slowly became comatose again. Vomiting a second time caused an improvement. This alternation kept up for nearly an hour and a half; but with the aid of small doses of brandy the child made a good recovery, and was discharged 18 hours after admission perfectly well. The immediate relief, followed by the slow recurrence of stupor after each evacuation of the stomach, was a remarkable feature. It was due, without doubt, to the slow development of fresh prussic acid from the fragments of almond not yet discharged.

THE CHEMIST AND DRUGGIST

☞ *For particulars of Advertisements, Subscriptions, &c., please refer to the first page of Literary matter. An Index to the Advertisements contained in this issue will be found in the front portion of the Journal.*

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EDITORIAL NOTES.

THE INSTITUTE OF CHEMISTRY.

THIS mysteriously-developed organisation has at last felt itself strong enough to venture a little way out of its hole, and announces that it is prepared to receive members. A meeting was held on the 1st inst., with Dr. Frankland in the chair, and the high and disinterested aims of the new Institute were set forth with some parade. These it is not necessary to insist on. The Institute is an Association of gentlemen, most of them of high eminence as chemists, who have combined with the perfectly legitimate, but not especially noble, purpose of getting a certain recognised standing in the commercial world. They want it to be understood that the fact of membership of their Institute is to be in future an indication of ability, such as the letters F.C.S. or Ph.D. do not of themselves convey. This is essentially cliquecism, justifiable no doubt, but capable of working serious injustice, and almost certain, sooner or later, to lead to such injustice, as pointed out by Dr. Muter and Mr. Wanklyn in letters to the *Chemical News*. We cannot, however, recognise the force of the former's argument that the Institute, when organised, was bound in fairness to admit all existing professional chemists, just as the medical and pharmaceutical organisations had done. The difference lies in the fact that these bodies had obtained Acts of Parliament which limited the practice of their respective professions to those who should be authorised by them to enter them. Obviously, it was simple justice that existing rights should be respected. The Institute of Chemistry neither possesses nor claims any such exclusive privileges, and unless it can succeed in establishing a special reputation, membership of it will be the purest farce. If any one of its members blunder, the whole body will suffer in proportion—a point worth the consideration of high-class men who may be invited to join.

The fact is the F.C.S. game has been about played out. The "lying spirit" which, according to a recent notorious utterance, has of late possessed half Great Britain, has assuredly for some years had a very comfortable nest in the professional world. We know no examples of swindling so disgraceful as the imposture which has been practised on the public by means of titular letters. Especially disgraceful, because the imposture has been carried on by men of education and reputation; in very many cases by professional teachers of morality. The public is becoming suspicious of those letters, and, curious coincidence, professional men are becoming careless about them too. The letters F.C.S. have had a similar history. They have been exploited with the utmost diligence, but their effect was fast wearing out. The heads of the Chemical Society who had got beyond them, assumed a magnificent astonishment that they should ever have been regarded as of any value, and assured the world that fellowship of that association was no guarantee of chemical skill, and only indicated that the person thus decorated took sufficient interest in the science to pay an annual subscription. Some of the less secure chemists saw the serious character of this announcement, and, not feeling sufficient confidence in their own ability to ensure their position, they conceived the plan of a society which should be of an exclusive character. The leaders of the society were easily drawn in on the ground that public interest demanded something of the kind, and because men love official duties. Thus arose the Institute of Chemistry.

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It was a little surprise for some of them when they found themselves blocked at the outset, and refused the use of the title of "professional chemists" which they had set their hearts upon. The Privy Council seems to have been the first to see that by legalising that title the Pharmacy Act would be infringed. Prompted by the Government department, the Pharmaceutical Council offered a very gentle opposition, and the analysts discovered to their amazement that they had no chance of securing the title of chemist at all. As Dr. Frankland put it, they learned that "the president of the Chemical Society, for instance, could not in a court of justice or elsewhere use the designation by which he is known all over the civilised world without thereby infringing the law of his country." So the newly-established gentlemen will have to be contented with the style of Fellow, Member, or Associate of the Institute of Chemistry.

⁂

The Institute is registered under the Limited Liability Act, and its members will have the benefits of that Act; but in consideration of the fact that no dividends or bonus or other sort of profit is to be made by membership as such, the Institute is not required to use the word "limited" after its title. Each member is liable to a sum not exceeding 5*l.* towards the debt of the Institution. At present, admission is to be obtained by election. It will probably be arranged afterwards by examination. A Fellow is to be not less that 24 years of age, and must have had three years' training in theoretical and analytical chemistry and physics. He must also have been engaged for three years either as professor, demonstrator or assistant to a chemist of repute, or must have conducted and published an original research of sufficient merit, or in some other way must satisfy the Council as to his deserts. Associates may be elected after their first three years' training. Associates will pay one guinea and Fellows two guineas per annum, the latter will also pay an entrance fee of five guineas. The council as now organised consists of the following:—

President:—E. Frankland, Ph.D., D.C.L., F.R.S., &c.

Vice-Presidents:—F. A. Abel, C.B., F.R.S., &c.; Alexander Crum Brown, M.D., D.Sc., F.R.S.E., &c.; Robert Galloway, M.R.I.A., F.C.S.; William Odling, M.A., M.B., F.R.S., &c.; R. Angus Smith, Ph.D., F.R.S.; Augustus Voelcker, Ph.D., F.R.S., F.C.S.

Treasurer:—C. R. Alder Wright, D.Sc., F.C.S.

Ordinary Members of Council:—John Attfield, Ph.D., F.C.S.; James Bell, F.C.S.; Michael Carteighe, F.C.S.; W. Crookes, F.R.S., F.C.S.; G. E. Davis, F.C.S.; Warren De La Rue, D.C.L., F.R.S., &c.; William Dittmar, F.R.S.E., F.C.S.; A. Dupré, Ph.D., F.R.S., F.C.S.; R. J. Friswell, F.C.S.; J. H. Gladstone, Ph.D., F.R.S., &c.; George Gore, F.R.S.; W. N. Hartley, F.R.S.E., F.C.S.; Douglas Hermann, F.C.S.; David Howard, F.C.S.; C. T. Kingzett, F.C.S.; A. F. Marreco, F.C.S.; F. A. Manning, F.C.S.; E. J. Mills, D.Sc., F.R.S.,; E. Neison, F.C.S., F.R.A.S.; John Pattinson, F.C.S.; T. Redwood, Ph.D., F.C.S.; J. Emerson Reynolds, M.D., M.R.I.A., F.C.S.; Thomas Stevenson, M.D., F.C.S.; R. R. Tatlock, F.R.S.E., F.C.S.; R. V. Tuson, F.C.S.; T. Way, F.C.S.

Solicitor:—James Pettengill, 32, Walbrook, E.C.

Secretary:—C. E. Groves, Somerset House Terrace.

On February 1, the following gentlemen were elected Censors:—Dr. Warren De La Rue, F.R.S., Professor Abel, F.R.S., Dr. Odling, F.R.S., and Dr. Roscoe, F.R.S. Their office will be to inquire into any alleged misconduct or infringement of the regulations by Fellows or Associates. About 300 Fellows are by this time enrolled in the Institute.

COUNTER PRACTICE.

The Pharmaceutical Council and the Apothecaries Society.

The correspondence between the solicitor of the Pharmaceutical Council and the solicitor of the Apothecaries Society has been published, but has not been justified. The object of the Pharmaceutical Council in intervening has not yet been explained, but those most familiar with the spirit of the bureaucracy which dominates that assembly are not in doubt. No one believes that the Council would have stepped in to save the Trade Association from the prospect of defeat. That they were willing to snatch from the latter some of the rewards of victory, is, we regret to say, by no means an impossible theory, and it is justified to some extent by the language of the *Pharmaceutical Journal*, which we quoted last month. There are pharmaceutists in high places going about and deploring the disaster of a decision in the law courts which shall render counter-prescribing legal. It was a representation of this calamity, we have reason to believe, which brought the two solicitors together, and the point urged was that, if the apothecaries pressed their claim they might obtain a judicial sanction to a practice which it was desirable rather to check than to encourage. The Apothecaries solicitor can, no doubt, form a very shrewd guess as to the probable verdict which the Court of Exchequer might give. Hence his indication of a willingness to compromise. According to Mr. Upton, the Committee of the Court of Apothecaries "was unable to discover any case where the sanction of the Society had been given to a prosecution on a pure and simple case of counter practice." The solicitor adds that in nearly all cases of prosecutions by the Society it has been for the double offence of visiting and counter practice. He skilfully leaves the impression, without giving any undertaking, that the Society of Apothecaries would not prosecute in cases of counter practice simply. This letter, we may remark, by no means bears out the summary of Mr. Upton's views published in the official report of the Pharmaceutical Council's meeting in January.

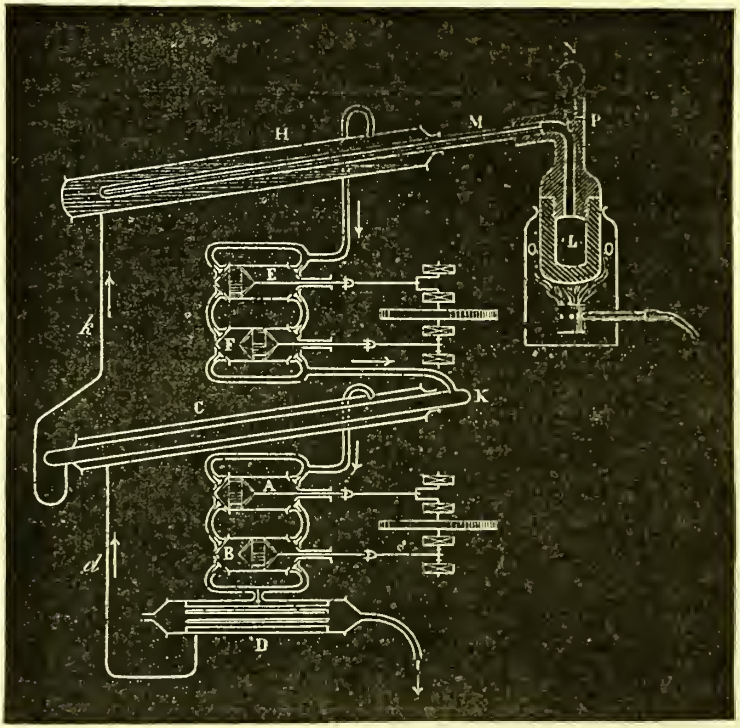
The Court's declaration that the sanction of the Society of Apothecaries had not been given to any case of prosecution for counter practice, was evidently made in what Mr. Gathorne Hardy would describe as "the argumentative sense." Of course we take Mr. Upton's word in reference to the sanction, but really the indictment is all that concerns us. The crucial case now *sub judice* is for that and nothing else. For aught we know, Mr. Shepperley may have visited patients and may have committed a thousand other crimes. The Trade Association knows only the indictment preferred against him, and is defending nothing but his right to give a gargle to a man who comes into his shop and asks for something for a sore throat. Replying to Mr. Upton's curious letter, Mr. Flux delicately hints at the inaccuracy of that statement, and asks for the very moderate promise that the Apothecaries Society will not in future delegate its prosecuting powers to other persons. This Mr. Upton flatly refuses, and re-asserts his former affirmation as to the policy of his Society.

The general conclusion which may be drawn from this interlude is something like this. The Apothecaries Society will give no sort of guarantee, but if the chemists behave themselves in a generally satisfactory manner, they (the Apothecaries) will not molest them in the enjoyment of their customary privileges of counter practice. The acceptance of such a condition would be a tacit admission of the Apothecaries claim which might be re-asserted at any convenient season, and would probably next time find the chemists less provided with defence.

We find no word in all the report of any communication having been made to the officers of the Trade Association of these transactions. That fact sufficiently indicates the animus of the interference.

THE APPARATUS USED IN CONDENSING OXYGEN TO A LIQUID.

WE copy from the *Journal de Pharmacie et de Chimie*, an engraving delineating the apparatus employed by M. Cailletet in his already classic experiments on the condensation of gases. A and B are two exhaust and force pumps with compound double action; the exhausting and compressing effect of each commences at the moment that of the other ceases. A and B act on liquefied sulphurous acid in the annular receiver, C, causing it to evaporate at a temperature of 65° C. (85° Fahr.) below zero. The sulphurous acid gas removed from C by the pumps, A and B, is by them forced into the receiver, D, kept cool by a current of cold water, and is there liquefied at a temperature of 25° C. (13° Fahr.) below zero, and at a pressure of about 2¾ atmospheres. The condensed acid returns to the receiver C by the small tube *d* as fast as it is liquefied. E and F are pumps exactly similar to A and B. They act on the liquefied carbonic anhydride contained in the annular receiver, H. The pressure here is such that the carbonic acid evaporates at a temperature of 140° C. (220° Fahr.) below zero. The gaseous carbonic anhydride is driven by the pumps into the receiver K surrounded by the liquid sulphurous acid at the temperature of − 65° C. It is there liquefied at a pressure of five atmospheres, and returns to the receiver H by the small tube *k*.



L is a retort of wrought iron strong enough to resist a pressure of 500 atmospheres. It contains potassic chlorate, and is so heated as to disengage pure oxygen. It is connected by means of a tubulure with an inclined tube, M, of very thick glass, 1 metre long, and surrounded by the liquefied carbonic acid at the temperature of − 140° C. The screw-stopper N on the tubulure of the retort allows of the opening of P, which communicates with the air.

After the four pumps have been worked for several hours by a steam-engine of 15 horse-power, and when all the oxygen has been given off by the chlorate of potash, the pressure in the glass tube is about 320 atmospheres at the temperature of − 140° C. On suddenly opening the orifice P the oxygen escapes with violence, causing such a great absorption of heat that part of the gas liquefies in the tube and spouts out when the apparatus is inclined.

One-third of the cavity of the tube (1 metre long and 1 millimetre in diameter) has been seen filled with the liquid oxygen.

THE CROWN v. LAMPLOUGH.

Mr. Lamplough's victory in the Court of Appeal on the question of the applicability of the Medicine Stamp Act to his Pyretic Saline is of something more than personal interest. Although we very fully reported the discussion last year (July 1877), it will be as well, perhaps, in a few words to re-state the issue. The Barons of the Court of Exchequer had before them this point:—The original Medicine Stamp Act enumerates a number of articles specially which, it says, are liable to duty. Among these occurs "waters—*videlicet*, all artificial mineral waters—and all waters impregnated with soda or mineral alkali, or with carbonic acid gas; and all compositions in a liquid or solid state to be used for the purpose of compounding or making any of the said waters." It was admitted that, as that Act stood, Lamplough's Saline would have been chargeable with duty, being included in the group thus described. Subsequently, another Act repealed the original one to the extent of removing that particular section. But, said the Crown, although Lamplough's Saline is no longer chargeable under that description, it still comes under the Act, for the schedule, after enumerating special articles, adds, "all other" medicines, &c., recommended for human ailments, or in which an exclusive right of preparation is claimed. The Crown said the repeal of the line quoted obliterates it altogether, and the first Act should therefore now be read as though that line had never been in it; then, clearly, Lamplough's Saline would be chargeable under this tail of the schedule. Mr. Lamplough said, "No; you must read the two Acts together; clearly the Legislature intended to remove from liability completely all such articles as would have been previously included in the line 'waters, &c.'" At the former trial Barons Huddlestone and Cleasby took the Crown view, but the Lord Chief Baron agreed with Mr. Lamplough's counsel. The verdict went by majority of Judges, and Mr. Lamplough appealed. The Court of Appeal has now decided unanimously in favour of Mr. Lamplough.

The importance of this decision, as far as the trade generally are concerned, lies in the fact that the Inland Revenue Board, as we have reason to believe, had made this a test case, and that, had they gained their point, they would have very likely proceeded to bring many other products, such as will readily be thought of, within the reach of the Medicine Stamp Act.

THE CHEMISTS' TRADE ASSOCIATION.—ELECTION OF EXECUTIVE COMMITTEE.

We have received a very elaborate conundrum from the office of the Chemists' and Druggists' Trade Association, which we have unravelled after patient study. It appears that the present executive committee, which may fairly claim to have "done the State some service," has modestly decided to withdraw itself, or, at least, like the British Government, to ask for a token of confidence. The election of the new executive committee is to take place at Birmingham on April 1, and will be under the entire control of an eminent firm of accountants in that town. The method of election is something similar to the plan adopted in the United States in choosing a president, or that followed in France for the choice of a section of the Senate. England, Wales, and Scotland are divided into 106 electoral districts, and to each such district is awarded one or more representatives, the full number being 130. Each member of the Association is to receive a voting paper, indicating clearly what he is to do. On that he is to name any chemist he may please resident in his own district. There are to be no published nominations, and as qualification for election the profession of pharmacy is all that is necessary, membership of the Association even not being stipulated for. The 130 representatives thus chosen will form the electoral college, and will from among themselves select the executive committee for the forthcoming year. This plan is novel and interesting, and may lead to some charming surprises. To be elected to the general committee without any canvass, without any declaration of policy, perhaps without any knowledge of the election, would be indeed a delightful experience. The system is excellently suited to bring out the best men, independent of central influence. Perhaps before the election the authorities will be good enough to answer one or two questions which suggest themselves. The first is, is a member at liberty to vote for himself? And, again, in what district are transpontine metropolitan members included? "London," according to the scheme, is given to Middlesex. Is the Middlesex representative to act for the whole of the metropolitan district, which goes a good way into Kent and Surrey, if not into other counties? It is perhaps a pity that London has not been specially dealt with, but its proportion of eight representatives in comparison with Birmingham's three, and Manchester's four, will not be complained of. The Association, we hear, is still prospering, and now numbers nearer 4,000 members than 3,000.

FOREIGN REPORTS.

The *Journal de Pharmacie et de Chimie* for February, 1878, contains in its "Revue des Travaux de Pharmaice publiés à l'Étranger," by M. C. Méhu, one very remarkable article. This purports to be a translation from the *American Journal of Pharmacy*, October 1877. It is entitled "Powder of Butter" (Poudre de beurre), and literally translated, reads thus:—

> "What follows is as little commendable as useful to know. Under the name of 'Star Butter Powder,' one sells a product *prepared* in this way: to one quart (1.1359 litres) of milk drawn 12 hours, one adds 1 livre (373 grams) of butter melted, and one teaspoonful of the powder. One churns and one obtains 2½ livres of fresh and delicious butter. This powder is a mixture of alum and sugar in equal parts. "In another case the powder of butter is composed of chloride of sodium and alum; one churns it with a mixture of cream and of milk. The people [*for which pay money*], who pay these cruel inventions, think that the *powder of butter* creates an insoluble modification of the elements of the milk and increases the proportion of butter! ! !"

The three notes of admiration are French. Three more would not fully express the feelings of the English reader. Powder of Butter, or in Pharmaceutical language, Pulvis butyri, is not a common article of commerce, and as a rule one would not expect to obtain a powder by mixing a quart of milk with a pound of melted butter and a teaspoonful of the powder it is desired to prepare. The sentence, too: "The people [*for which pay money*], who pay these cruel inventions, &c.," is hardly remarkable for epigrammatic point or lucid force. The words in brackets are quoted without translation in the French paragraph. Curious to see the source of this remarkable article, we turned to the journal referred to. There we found a paragraph entitled "Butter Powders," giving an account of some analyses of them. A sudden light burst through the fog and we hastened on. We found a little further the sentence, "The first was 'Star Butter Powder,' and it was *to be used* as follows. The butter was not to be melted but warm. Then the article goes on to explain a declaration accompanying the powders, and in a bracket these words "to which 'butter powders' are attached, and for which people pay money," which with the context, conveys the idea that the declaration is more valuable than the powder. Still, we do not think that French readers would so understand M. Méhu. Before meddling with articles so idiomatic as Butter Powder, M. Méhu should brush up his English.

REPEATING PRESCRIPTIONS CONTAINING POISONS.

Dr. Julius Althaus writes in the *British Medical Journal* on this subject. He mentions a case where chloral was bought over and over again from a prescription of his own. On one occasion he says the patient showed him to his horror a supply of a dozen bottles of the mixture just received from a West End chemist.

Dr. Althaus remarks on the dangers made possible by this system, such as the growth of an opium or a chloral appetite, and possibly too the facilitation of the secret poisoners' schemes. Dr. Althaus has been inquiring as to the system adopted in other countries, and he believes that in Germany and Austria alone are there any restrictions on the repetition of prescriptions ordering poisonous drugs.

In Holland and Belgium, there is no law restricting the chemist from again and again compounding the same prescription. Dr. J. Morel, of Ghent, tells him that in Brussels and some other large towns, chemists' shops are hardly anything but magazines for the sale of patent medicines, which anybody may procure without trouble. In the smaller towns, there is less of this; but the doctors are in the habit of telling their patients to keep their prescriptions and have them made up again and again, if found useful. The consequence is, that the patient gains confidence in a prescription, instead of in the judgment of the doctor; he labels certain receipts as good for certain diseases or symptoms; thinks himself after a time, perfectly able to judge as to what ought to be given in a special case, and, when a friend is ill, takes some formula out of his pocketbook and advises him to have it made up.

In Spain, patients can do exactly as they like. Dr. Jelly, of Madrid, says, however, that less mischief is done by Spaniards in this respect than by others, because Spanish doctors generally only write prescriptions for some simple infusions, or a small quantity of some advertised French nostrum, just sufficient to last for a day, and order their patients to come back to the doctor every day until they are cured. Dr. Jelly has, however, found many English travellers come to him with a pocketful of receipts from London physicians, and a plan of treatment laid down sufficient to last them a lifetime, and he thinks that the profession are as much to blame in the matter as the patients.

Italians, like Spaniards, take, as a rule, very little medicine, and Italian practitioners rarely order potent medicines, so that less harm is done in that country in this respect than elsewhere.

Both in France and in the United States, there is absolute liberty to procure any quantities of powerful drugs from a single receipt.

Prussia, however, has enjoyed, since 1801, a law requiring that all prescriptions written by either physicians or surgeons, and containing drastic purgatives, emetics, remedies used for bringing on menstruation and increasing urinary secretion, opiates and similar powerful drugs, shall, after having once been made up, not be prepared a second time without the knowledge and approval of the prescribor; but, to prevent inconvenience, it has become of late years the custom in Germany for the prescriber, in case he thinks renewal desirable, to add the word *reiteretur* at once, and he may add to this the words *bis*, *ter*, &c., at his discretion. Unless this appear on the prescription, no good chemist will renew an old formula; and, if he did so, he would be punishable.

In the Austrian pharmacopœia, the more powerful medicines, more especially the narcotics, ergotine, &c., are marked with a cross, and the chemist is legally bound to give no more than one supply for a prescription containing any such drugs. Some physicians add at once the word *repetatur* or *bis*, *ter*, &c., where they consider it proper. All prescriptions have to be stamped by the chemist who makes them up, and who is also bound to put down the price he has charged for the medicine. Opium-eaters endeavour in all possible ways to circumvent this law; but the chemist who supplies them to excess lays himself open to an action at common law, and, where real harm has been done, even to criminal proceedings. Professor Benedict reports, as an instance of the conscientious manner in which chemists in Austria generally discharge their functions, that, quite recently, when a physician, suffering from a painful affection, prescribed large doses of hydrate of chloral for himself, the chemist sent word back to say that he must request a prescription written by another doctor, as the prescriber might, under the influence of pain, take poisonous doses.

Dr. Althaus has no earthly objection to a patient continuing as long as he likes the use of compound rhubarb pills or of simple tonics and alteratives, which, even when taken in excess, can produce no serious damage. As soon, however, as poisons come into play, the matter assumes an entirely different aspect, not only with regard to the individual, but also to the community. "It seems to me," he says, "the duty of the State to carry out the principle of the Sale of Poisons Act, not simply in the letter, but in the spirit; and to this end a legal check must be placed upon the indiscriminate supply of medicinal poisons. The public, if fairly reasoned with, must understand that it would be absurd to charge us with mercenary motives in such matters; and I have never experienced the slightest difficulty in convincing intelligent laymen, before whom I have occasionally laid this subject, that the change which I advocate is really desirable and proper."

A DENTAL BILL.

A bill was introduced into the House of Commons by Sir John Lubbock on January 30, the object of which is to obtain legal protection for the title of "dentist," "surgeon-dentist," "dental surgeon," "dental practitioner," or any name, title, addition, or description implying registration under the Act, or that the person using such is specially qualified to practise dentistry. The penalty for illegal use of such title is fixed at not exceeding twenty pounds, and the proposed date for the commencement of the powers of the Act is August 1, 1879. The Bill proposes to register any person who

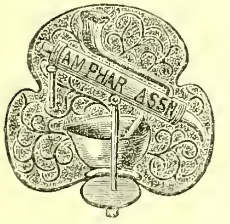
> (*a*) Is a Licentiate in Dental Surgery or Dentistry, of any Royal College of Surgeons in the United Kingdom, or of the Faculty of Physicians and Surgeons of Glasgow; or,
>
> (*b*) Is at the passing of this Act *bonâ fide* engaged in the practice of dentistry, either separately or in conjunction with the practice of medicine or surgery.

This Bill seems to seriously threaten the existing rights of those many chemists and druggists who, without making any false representations whatever, have joined a little dentistry to their drug business. Some of them have acquired considerable skill in the extraction of teeth, and it would be a needless attack on them and on the public convenience if this right were withdrawn. The Bill, as we read it, would not prohibit the actual performance of any dental operation by an unregistered person, but it would prevent the assumption of any such title as that of "dentist," and possibly, too, the exhibition of any such announcement as "teeth carefully extracted," &c. Of course, too, an unregistered person would not be able to sue for any claim in respect of dental services.

We sympathise with the objects of the Bill to some degree; but if its promoters really intend to stamp out dental druggists altogether, we think, on behalf of the latter, and also for the benefit of the public, and especially of poor persons, the Chemists' Trade Association should offer a serious opposition to it.

REVIEWS
AND
Literary Notes.

The Proceedings of the American Pharmaceutical Association at the 25th Annual Meeting. Held at Toronto, Ontario, September, 1877. Philadelphia: Sherman and Co.


AM. PHAR. ASSN.

This is a bulky volume of 650 pages, printed on paper of such size and texture as to make it seem much larger than our own "Yearbook of Pharmacy," which, however, contains the same amount of literary matter and a hundred pages of advertisements besides. In other respects there is of necessity much resemblance. The price of the American "Proceedings," including postage in America is 6 dollars unbound, and 6½ dollars or about 26*s.* bound; that of the "Yearbook" is 10*s.*, or to members, 7*s.* 6*d.* The short review of all the new facts connected with pharmacy, with which the volume was for the first time prefaced in 1876, gives place this year to a report "drawing attention to a few subjects only, which seem to deserve special mention, either because entirely new or because they throw further light upon prominent subjects hitherto embraced in the report." This change has been made because the value of an extended report seemed questionable to the editor, Mr. C. Lewis Diehl. English pharmacists acquainted with the masterly sketches of yearly progress contained in the "Yearbook of Pharmacy" would be hardly able to appreciate the grounds of Mr. Diehl's opinion. Those reports are the last feature whose value and propriety English pharmacists would be likely to question.

The American work is embellished by a frontispiece giving the portrait, engraved on steel, of the pleasant face of Charles Tibbetts Carney, who, it appears, departed this life fifteen years ago, and was biographically interred in the report of the "Proceedings" for 1863! Assuredly the Publication Committee of the American Pharmaceutical Association will not be accused of indecent haste. Such deliberation one would have thought more characteristic of this hemisphere.

The reports on Indian drugs, by Prof. Dymock, which are dismissed in the English publication in half-a-dozen lines referring the reader to their original source, are here reprinted almost verbatim, and form a considerable proportion of the report on Materia Medica. This, of course, takes up space, which, if the original publications had been accessible to American readers, might have been devoted to other matter.

A characteristic feature, occupying a prominent place in the volume before us, is formed by the descriptions and illustrations of new forms of apparatus. This and the reports of committees on the Drug Markets of Canada and New York; on Adulterations and Sophistications; on the Centennial and Toronto Exhibitions; and on Legislation, are specialties of the American work, and indicate a system of working in groups of members, which with some drawbacks has many advantages, and will yet, we hope, become ingrafted on the practice of the British Pharmaceutical Conference.

A detailed comparison of the intrinsic merits of the reports contained in "The Proceedings and the Year-book on Materia Medica, Pharmaceutical Chemistry, &c.," it is not our place to make, but, without going into details, we are not inclined to say that a comparative study of the two works disparages the English year-book. Pharmacists will read both with extreme interest and profit, but we have a disposition towards the belief that the English book is the more cosmopolitan.

The vignette at the head of this article represents the badge adopted by the American pharmacists at their meeting in 1876. We are informed that it may be obtained of the secretary, nickel-plated, at the price of 50c.

The pharmaceutist who studies it carefully will perhaps modify his first impression in regard to its signification. The apparatus sketched is not intended to represent a short pipe and a bowl of punch, though what the background symbolises, unless it be the ace of clubs, it is beyond our scientific attainments to explain.

Catalogue of the Collections in the Museum of the Pharmaceutical Society of Great Britain. Compiled by E. M. Holmes, F.L.S. Curator of the Museum. 8vo., pp. 302. Printed for the Pharmaceutical Society. London, 1878.

A visitor to a museum without a catalogue is in much the same condition as a stranger in a country whose language is unknown to him. The key to unlock the stores of interest and instruction which surround him is wanting. But a visitor to the Pharmaceutical Museum will now have only himself to blame if he leave without learning very much about the objects there represented. Seldom have we seen a catalogue which so well fulfils the triple object of giving the reader clear condensed information on each specimen, of stimulating him to look further into the subject, and better than all of directing his further researches. In most cases each botanical or mineral species has a separate number assigned to it. All the objects obtained therefrom are included under that number, but are labelled further *a*, *b*, *c*, &c., corresponding to references in the catalogue. Rarely does the number at the left hand of the page represent a single specimen. In some cases no less than forty distinct objects have but the one numeral attached. The total number of headings embraced in the catalogue is 1,526; this probably represents not less than four thousand objects, and when we remember that forty years ago the museum was not, we cannot help feeling satisfied at its present state of growth. Following the list of specimens belonging to each species is a *Note.* This gives the history of the more remarkable specimens as far as known with occasional remarks on the characters distinguishing the drug from its allies, on its uses, names, and chemical composition. In every case references are given where possible to figures of the plants, drugs, and their anatomical details, and also to well-known works in which more extended information can be obtained. Following the Latin name is a list of English or vernacular synonyms. This is a very valuable feature, and in our own opinion its further extension in a fresh edition whenever that may be published would be very advisable. For instance, of the Aleurites Ambinux *Pers*, the following English names are given. Belgaum, or Indian walnut, candleberry tree, and Bankoul nut. Probably most pharmacists have heard of the candlenuts of the South Seas and of commerce, but we do not think many would at once associate the candlenut with Aleurites Ambinux. The addition of that name to the list would add to the interest with which the specimen was regarded and the value of the information supplied by the catalogue. It is in this way, by the aggregation of scattered knowledge, that lists of synonyms so often regarded as of little worth show their true value. The typographical execution of the work is on a par with the accuracy of the information it supplies. The errors we have noticed are rarely, if ever, of such importance as to mislead the reader; and those accustomed to the task of seeing through the press matter of so technical a nature can best appreciate the immense amount of painstaking labour this accuracy must have involved. The extensive index occupying one-tenth of the book is not so complete as it will probably be made. We are promised a supplement containing a catalogue of the collections of the Chinese, Brazilian, Morocco, and other series of drugs, and we understand that the opportunity will be taken by Mr. Holmes to make the index as perfect as it can be made. The accurate lists of the typical collections of cinchonas and other important drugs, from which the descriptions of Pereira, Howard, Bergen, Martiny, Guibourt, Hanbury, and other pharmacological celebrities are taken, give this catalogue an international interest. No student of drugs who aspires to the honour of adding to our knowledge of this subject can afford to be without it. We congratulate the pharmaceutical world on the publication of this work, and Mr. Holmes on its success.

On Ringworm and its Management. By Tilbury Fox, M.D. Reprinted from the *Lancet.* London: Henry Renshaw. 1878. Pp. 62.

The substance of this book was first delivered in lectures at the University College Hospital. It is now divided into eight chapters, viz., introductory observations; general description; detailed description; ringworm of the body; diagnostic considerations; treatment; preventive and disinfecting measures;

ringworm in schools and public institutions. The name of the author is a sufficient guarantee for the reliability of his statement.

Aids to Forensic Medicine and Toxicology. By W. Douglas Hemming, M.R.C.S. London: Bailliere, Tindall & Cox. Also Dublin, Edinburgh, and Glasgow. 1878. Pp. 72.

The object of the work will be attained, according to the preface, if it induce students to pay more attention to medico-legal science. The printed matter on each page occupies a space a little more than one-quarter the size of our pages. The type is considerably larger than that of the Chemist and Druggist, and the 72 pages are divided into 47 chapters, each with a separate heading in large type. From this it will be evident that the amount of matter the work contains is hardly overwhelming, and students who are fond of skeletons will doubtless be pleased with this work.

"The Organon" is the title of a new Anglo-American Homœopathic quarterly review. It is edited by Dr. Skinner, Liverpool; Dr. Berridge, London; Dr. Lippe, Philadelphia; and Dr. Swan, New York. Its professed object is to advocate the homœopathy of Hahnemann pure and simple, and to separate it clearly from the alloy of false teaching which has accumulated about that gentleman's doctrines. This would be a very good idea if it could be proved that Hahnemann was absolutely infallible and knew everything; if this were not the case, we fail to see why the field of investigation should be so rigorously protected against all succeeding trespassers. Medical science, above all things, should avoid McMahon's stupid motto, "Here I am, and here I stick."

We have several times had the pleasure of referring to the "Photographic Almanac," issued by the proprietors of the *British Journal of Photography*, and edited by Mr. J. Traill Taylor. The issue this year contains a beautiful specimen portrait, epitome of progress, and a practical article on enlarging, by the editor, with nearly a hundred other articles by professional and amateur photographers. Many of these articles are illustrated, and they afford a mass of valuable information which no photographer could afford to do without if the work, instead of costing 1*s*., were sold at twenty times that figure.

NEW BOOKS AND NEW EDITIONS.

Bible Plants: Their History. By J. Smith. With 10 lithographic plates. 12mo., pp. 260. Hardwicke	5/
Condensed Compendium of Domestic Medicine, and Companion to the Medicine Chest. By Savory & Moore. 12mo., pp. 120. Churchill	1/6
Destructive Distillation: A Manuelette of the Coal, Tar, and other Industries; the Substance of Lectures at Anderson's University. By E. J. Mills. 8vo., pp. 56. Van Voorst	2/6
Diseases of Children. By E. Ellis. 3rd edition. Post 8vo., pp. 394. Churchill	7/6
Diseases of Larynx, Lungs, and Throat. By F. de H. Hall. Churchill	2/6
Elementary Botany: Notes of Lessons. By W. Bland. Part II. 12mo., pp. 70. Bemrose	0/6
Fern World. By F. G. Heath. 3rd edition. Post 8vo., pp. 466. Low	12/6
Lectures on the Examination of Horses as to Soundness: Delivered at the Edinburgh Veterinary College. By W. Fearnley. Post 8vo., pp. 204. Baillière	7/6
Medical Directory for 1878. Post 8vo. Churchill	12/
Medical Ethics. J. Styrup. Churchill	2/6
Nervous System, Diseases of. By S. Wilks. 8vo., pp. 480. Churchill	15/
Photographed Spectra: 136 Photographs of Metallic, Gaseous, and other Spectra. By J. R. Capron. 8vo. Spon	30/
Physiology. By M. Foster. 2nd edition. 8vo., pp. 652. Macmillan	21/
Psoriasis, Treatment of. By Balmanno Squire. 8vo. Churchill ..	2/6
Ringworm. By Tilbury Fox. 18mo., pp. 62. Renshaw	1/6
Rust, Smut, Mildew, and Mould: An Introduction to the Study of Microscopic Fungi. By M. C. Cooke. With coloured figures, by J. E. Sowerby. 12mo., pp. 262. Hardwicke	6/
Surgeon's Vade Mecum. By R. Druitt. 11th edition. 12mo., pp. 850. Renshaw	14/
Telephone: A Lecture Delivered before the Society of Telegraphic Engineers, October 31, 1877. By A. G. Bell. 8vo., pp. 32. Spon	1/6
Telephone, with Directions. By A. E. Dolben. 16mo., pp. 126. Low	1/
Treatise on Photography. By W. de W. Abney. 12mo., pp. 336. Longmans	3/6

Correspondence

CANINE TOXICOLOGY.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

Sir,—I have read with interest the letters on the above subject which have appeared in the Chemist and Druggist, and hope you will find space for this contribution. I think if the dogs were left to decide for themselves they would prefer chloroform to any other means of exit from this wicked world. From two to four drachms is sufficient for a dog if put on a handkerchief and tied over mouth and nose. Among other reasons, I recommend chloroform because I have not so much hesitation in selling it as strychnia or hydrocianic acid; there is not nearly so much risk.

Yours, &c.,
Anæsthetic.

Belfast.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

Sir,—*Apropos* of the above subject I observe that the correspondents who have detailed their non-success with prussic acid have been too economical in the use of it—have given it in doses of 40, 50, 60, and, at the most, 120 minims—have, in short, endeavoured to poison their dogs with as small an expenditure of the acid as possible. My own plan has always been the reverse; to be sparing of my own reputation and of the animal's sensations rather than of the hydrocyanic (Scheele's, in bulk in 10 or 16 oz. bottles, at 1*s.* 4*d.* the pound, instead of ounce bottles, at 3*d.*, is cheap enough), and I have poisoned dozens without difficulty.

I always make it a *sine qua non* that someone who knows the dog shall hold his mouth. The head being held in an almost erect position, I insert an ordinary one, or Scheele's acid stoppered bottle, half filled with acid, as far in the mouth as possible, and retain it there until its contents are fairly emptied. As I withdraw the bottle the holder of the dog forcibly closes the mouth and keeps the jaws together to prevent any natural and voluntary rejection of the noxious fluid on the part of the dog, which I take to be the "vomiting" referred to by some of your correspondents, for I question whether actual sickness ever occurs. Upon the dog being let free, he sometimes falls at once, but oftener walks a very short distance and then dies.

Yours truly,
John Throssel.

Cambridge.

THE PRELIMINARY EXAMINATION.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

Dear Sir,—Will you kindly give publicity to the enclosed letter? It was sent to the editor of the *Pharmaceutical Journal*, who contents himself with making a quotation from it in his leader in apparent astonishment.

It would appear that anything unpleasant is not admissable into the columns of that journal.

Yours respectfully,
Macclesfield, February 11, 1877. W. J. Bates.

To the Editor of the "Pharmaceutical Journal."

Sir,—The result of the recent Preliminary examination is somewhat startling. The fact of 192 candidates out of 313 having failed to satisfy the Examiners will naturally suggest the inquiry, "How has this happened? Has the examination been a fair and honest one? Have the papers been judged on their general excellence or otherwise, or has some catch-question, some miserable quibble, been the rule and guide of one or more of the Examiners?"

I suspect many will be inclined to the latter opinion, and I candidly confess myself to be one of the number.

I also think it is high time that an unmistakable protest should be raised against the gross injustice done to the rejected candidates. First, they are kept in anxious suspense for three weeks (which to them is three weeks lost); and then comes the uncourteous intimation, "You have failed, but no further information will be given." Here are two hundred young men, many of them conscious that they have written a fairly accurate paper, groping in the dark, utterly at a loss to discover in what subject or at what point they have failed. If the examination is intended to be a *bonâ fide* test, there can be no reasonable objection to state in what subject the Examiners are dissatisfied. If I am not misinformed, it is done in the examination for the Royal College of Surgeons, and the sooner the present system of injustice, tyranny, and cowardice—for I can designate it by no other term—is abandoned, the better for the trade.

I am, Sir, yours respectfully,
Macclesfield, January 29. W. J. Bates, Local Secretary.

PRICE AND QUALITY.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

Sir,—I should like to say a few words in reply to "S. G.," under the above heading in this month's Chemist and Druggist; and I should like to know what a chemist is to do, situated the same as a friend of mine in a populous village, with four amateur druggists within a stone's throw, calling themselves patent medicine vendors, but who sell nearly every saleable drug, and in many cases at less price than we can buy for? If he offers his customer sweet nitre at 3*d.* or 4*d.* per ounce, he is told directly that Mr. So-and-So sells the best at 2*d.*, whilst Tr. opii is openly sold at 3*d.* the ounce. My friend has no protection whatever, as no one but the Pharmaceutical Council can prosecute under the Act, which, of course, they will not do until these amateur druggists cause an inquest. Only the other day I just managed to save an inquest by stopping a mother from giving a six weeks' babe one to two teaspoonsful of "syr. poppies," bought at a grocer's (without any label, of course), who had told her that was the dose.

Then as regards the dispensing department, "S. G." is mistaken in saying the petty manœuvring is not carried on at the high-class shops. A short time since I had the following prescription shown me by a person who had just had it made up at the first pharmaceutical establishment of a large town of 160,000 population:—

Potass iodide .. .. ʒss.
Inf. digital.. .. .. ℥ij.
Inf. quassæ .. .. ℥vi.

who had found graduated bottle, patent cap, wrapped and sealed, with prescription envelope, all done at 1*s.* 2*d.* I leave it to anyone in the trade if he thinks it would be made according to prescription at the price (of which I had certain proof).

I am, &c.,
January, 1878. J. P. R.

RURAL PHARMACY.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

Sir,—I read with pleasure your correspondent S. G.'s letter, condemning what he calls miserable frauds and petty practices, and speaking of Watered Sweet Nitre, &c. He asks for a universal private mark; but what can he do with so many in our ranks who will stand at nothing so long as they can sell these admixtures? Now in the small village I live in, I have no less than half-a-dozen retail chemists, sending here to supply little chandler shops with boxes of pills, at 4*d.* per dozen, to retail at 1d. each. Salts, senna, magnesia, cough mixture, friar's balsam, &c., and all after the same rate. Now is this fair competition? These gentlemen as a rule keep swell shops at home and carry their heads high. I do not know what the medical profession can feel by being classed with such (*vide* the judges' remarks in Apothecaries *v.* Shepperley). I myself am ashamed of them and only a paltry village chemist. One told me the other day that you must do anything for a living in these days of competition; but I should like to know who it is causes the competition, but these cutting men and hawkers. I fancy if they had to have a hawker's licence, they would think themselves above it, (some of them by the bye go out preaching, and tell their congregations to do as they would be done by, but they do not seem to follow it out though).

I would gladly hail the idea of a universal private mark, not only for prescriptions, but everything else used and consumed by the trade, as I do not believe the public expect chemists any more than other trades to work without a fair remuneration for their labour. I thought when the Pharmacy Act passed in 1868, it would do away with petty practices, but I find I was in error. I hope, now the Defence Association is formed, they will do what lies in their power, to do away with these underhanded doings, and so improve the trade at large.

Yours truly,
A Lover of Fair Play.

LEGAL & MAGISTERIAL.

LAMPLOUGH'S PYRETIC SALINE.

The Attorney-General v. Lamplough.

(*Special Report.*)

This case came before the Appeal Division of the Supreme Court of Judicature, Westminster, on January 22 and 23, before Lords Justices Bramwell, Brett, and Cotton. It was an appeal from the Court of Exchequer, the decision of which Court had, by a majority of the judges sitting when the case was heard, fixed the defendant with a penalty of 10*l.* for having sold a bottle of medicine, called "Lamplough's Pyretic Saline," without the cover, wrapper, or label provided by the Stamp Commissioners for denoting the duty chargeable on such bottle.

By the schedule to the Act of 52 Geo. III. cap. 150, a duty was imposed upon "waters—viz., all artificial mineral waters, and all waters impregnated with soda or mineral alkali or with carbonic acid gas, and all compositions in a liquid or solid state, to be used for the purpose of compounding or making any of the said waters."

By a clause at the tail of the schedule, the duty was made to extend to "all other pills, powders, lozenges, tinctures, potions, cordials, electuaries, plaisters, unguents, salves, ointments, drops, lotions, oils, spirits, medicated herbs and waters, chemical and officinal preparations whatsoever, to be used or applied externally or internally as medicines or medicaments for the prevention, cure, or relief of any disorder or complaint incident to or in any wise affecting the human body made, prepared, uttered, vended, or exposed to sale by any person or persons whatsoever, wherein the person making, preparing, uttering, vending or exposing to sale the same, hath or claims to have any occult secret or art for the making or preparing the same, or hath or claims to have any exclusive right or title to the making or preparing the same, or which have at any time heretofore been, now are, or shall hereafter be prepared, uttered, vended, or exposed to sale under the authority of any letters patent under the Great Seal, or which have at any time heretofore been, now are, or shall hereafter be, by any public notice or advertisement, or by any written or printed papers or handbills, or by any label or words written or printed, affixed to or delivered with any packet, box, bottle, phial, or other inclosure containing the same held out or recommended to the public by the makers, vendors, or proprietors thereof as nostrums or proprietary medicines, or as specifics, or as beneficial to the prevention, cure, or relief of any distemper, malady, ailment, disorder, or complaint incident to or in any wise affecting the human body."

By the 3 and 4 William IV. cap. 97, sec. 20, so much of the Act of 52 George III. cap. 150 was repealed as related to "waters—viz., all artificial mineral waters, and all waters impregnated with soda or mineral alkali, or with carbonic acid gas and all compositions in a liquid or solid state to be used for the purpose of compounding or making any of the said waters."

The preparation sold by the defendant was said to consist of tartaric acid, bicarbonate of soda, and chlorate of potash, and the question raised was whether it was taxable under the Act of

George III., or whether the tax was abolished by the Act of 3 and 4 William IV.

For the appellant it was contended that Lamplough's Pyretic Saline was a beverage which, whilst the Act of George III. was in operation, would have been taxable under the clause headed "waters" in the schedule, but that that had been repealed by the subsequent Act. For the Crown it was contended that the preparation was a medicine, and notwithstanding the repeal of this particular portion of the schedule, was taxable under the general words in the tail of the schedule.

Mr. Herschell, Q.C., Mr. Ince, Q.C., and Mr. Cooper were counsel for the appellant. The Crown were represented by the Attorney-General, the Solicitor-General, and Mr. Dicey.

The arguments, which lasted the greater part of two days, having been concluded, Mr. Baron **Bramwell** delivered judgment as follows:—

I think this judgment must be reversed. I cannot agree with the majority of the Court below. The first question that has been argued before us is whether in the reign of George III. this article would have been within the description of the schedule, "waters impregnated with soda or mineral alkali, or with carbonic acid gas, and all compositions in a liquid or solid state to be used for the purpose of compounding or making any of the said waters."

Now this composition is in a solid state for the purpose of making a certain water, and the question is whether it is for the purpose of making "*a* water," and next whether what is made from it is "*a* water" within the prior description. I confess I should have had great difficulty in deciding that as a matter of fact. I can understand that it might be said it is not properly speaking "*a* water." That difficulty, however, is to my mind removed by the evidence of the witnesses for the Crown, who say that what is made by the use of it is properly called "*a* water impregnated with carbonic acid gas." They may be wrong for aught I know, but that is what they say, and one is happy to think that this judgment of ours will not prevent the Crown from filing a further information against the defendant if they have any better evidence to produce. What they have said in so many words is, that it is made by the use of water, and is impregnated with carbonic acid gas. It may be that that is a wrong description. It may be that they ought to have said "No; you would not call this a water, but you would call it a medicine or a potash draught," or something of that sort. That may be so, but they have said the contrary. Then one of the learned Barons in the Court below said it is not within that, but it is not only impregnated with carbonic acid gas but there is something else in it. With great submission, however, I cannot see that that prevents it from being impregnated with carbonic acid gas. I cannot help thinking the learned Baron was confounding two things, and he was, because there was something else in it, doubting the expression of the witness that it was "a water impregnated with carbonic acid gas." As I say, that is a matter which may be doubtful as far as I know, but still, to say it was not "a water impregnated with carbonic acid gas," because there was something else in it, is, to my mind, a mistake. I really hardly know how to deal with it, except by saying that there is no legal reason which one can give for it; but it is not true as a fact, that the thing is not impregnated with carbonic acid gas because it has got something else in it. If it were examined, I think it very likely that you would find scarcely anything which is impregnated with carbonic acid gas which has not got something else in it. In the present case, even if we were to leave out the chlorate of potash there would be in this water tartaric acid and a small quantity of bicarbonate of soda. I cannot agree with the reasoning of the majority of the Judges in the Court below. It seems to me that the witnesses for the Crown have shown—what has been controverted before us—that what comes from this preparation is "a water impregnated with carbonic acid" within the meaning of this particular clause of the schedule.

Now the next question that arises is, Does the repeal of this part of the schedule which imposes a duty upon soda water and these other waters leave an article which would have been within that specific part of the schedule to come within what has been called "the tail of the schedule"? Now it is admitted that if that specific clause as to "waters" had not been inserted in the schedule this preparation would have come within the tail of the schedule; because it would then have been a powder which by public notice and advertisement was recommended as being useful for the cure of certain diseases and disorders. But the question has to be considered with reference to the specific enactment as well as the general one. Now it seems to me that the meaning of the specific enactment in conjunction with the general one was that this article was taxable under what I will call the "schedule" enactment and not under the general one. I think that may be made manifest by this:—The words are, "Waters, viz., all artificial mineral waters." Now, stopping there, an "artificial mineral water" would have been taxable whether it were claimed under a patent or whether the inventor claimed to have any occult mode of preparing it, or whether or not he said that it was good for human diseases. Under the operation of the schedule enactment, "artificial waters" would have been taxable whether they were or were not within any of the categories of the tail of the schedule, and they would consequently not have been taxable by virtue of what is in the tail of the schedule, because they would have been taxable whether the tail of the schedule was there or not. I care very little for the use of the word "other" in the tail of the schedule, and I should have come to the same conclusion even if it were not there; for I think the schedule enactment would have taxed these things whether they were patent medicines or not. You may read the schedule in connection with the Act as amounting to this:—Waters—viz., all artificial or mineral waters—whether sold under a patent or exclusive right to them or not, shall be taxable." That is the meaning of the schedule. Then comes the repealing Act, which says, "So much of the schedule as is contained in the following words:—Waters—viz., all artificial mineral waters"—and so forth; and you might read in there, "whether sold under a patent or not"—"shall be and the same is hereby repealed." That was the true construction both of the schedule and of the repealing Act, because you may always read words which are there in substance though not in words.

The argument on the part of the Crown is that, although the schedule enactment which makes artificial mineral waters taxable, whether they are patent waters or not, is repealed, yet if they are sold under a patent claim, or if you say they are good for this or that kind of thing, they are taxable. Now if you consider that for a moment that cannot possibly be. My point (if I have made it intelligible) comes to this: the schedule taxes a thing whether it is a patent thing or not; the tail of the schedule taxes certain things which for the present purpose are patent things only; the repealing Act says, "You shall not tax artificial mineral waters, whether they are patent or not;" but the Crown says, "Nevertheless we contend they are taxable under the tail of the schedule." It seems to me almost clear to demonstration that that is not so.

Then they say, "You cannot look at a repealed Act of Parliament, or a repealed portion of an Act of Parliament, in order to see what is the meaning of what remains of the Act." I do not know how too strongly to express my entire dissent from any opinion of that kind; it seems to me that it cannot be true. If it were true, this would follow: that a clause in an Act of Parliament, which at one time had one meaning, might, by the repeal of some other clause, have some other meaning. I do not know that I can put a better illustration of that than that put by Mr. Herschell in the course of his argument:—A duty is imposed upon race horses, carriage horses, riding horses, and all other horses; then the duty is taken off race horses, and it is said, "Nevertheless you must look at the thing as if it had never existed at all, and race horses will then come in under the general words 'all other horses'." Now that cannot be. Now supposing an Act said, "So and so shall be the law;" and then that a subsequent Act said that that old Act should not apply to certain matters, and that a new law should be created, but that there was no particular naming of the matters, so that you could only make sense of the second Act by looking at the first; in that case you must not do it, for the first Act must be taken to be obliterated. To my mind that is not and could not possibly be the law, for its observance would be impossible. It is right enough to say that where an Act of Parliament has been repealed, then, as to all matters not completed and ended at the time of its repeal, it is as though it had never existed for the purpose of seeing what is the governing law in respect of that matter.

I have endeavoured to deal with the words of the Act, and I will now endeavour to deal with the substance, of course interpreting the words in accordance with what I have said.

Now I cannot have a misgiving about this case. The intention of the Legislature was to exempt these waters from taxation, and not to subject them to taxation, even if the vendor of them should think fit to say they were good for all sorts of diseases.

or that he had got some patent mode for doing it, or some occult mode of preparing it; the intention of the Legislature was to exempt the article from taxation under all circumstances. If it had not been so, the Legislature might have said, "This clause in the schedule as to waters—viz., &c.—is repealed, provided that nothing shall repeal so much of the tail of the schedule as would make them liable to be looked at as waters sold under a claim of exclusive right," and so forth. The Legislature has not done so; and, for this reason, it intended to exempt the article from taxation, whether the person vending it should or should not say or do something frivolously, which otherwise would have brought it within the tail of the schedule.

I am of opinion, therefore, with great respect to the majority of the Court of Exchequer, that this judgment cannot be sustained, and that the appeal must be allowed.

Lords Justices Brett and Cotton concurred, and the appeal was allowed with costs.

ANGOSTURA BITTERS.

This popular flavour was the subject of a trial in the Court of Chancery last month. The plaintiffs were the sons of Dr. Siegert, who was the original inventor. When first made the article was called "Aromatic Bitters," but it seems to have acquired in England the title of Angostura Bitters, being so named from the city (in Venezuela) where Dr. Siegert first made it. Now it so happened that a certain Dr. Meinhardt, also residing at Angostura, did make a preparation which he called Angostura Bitters. Since 1846 the name of Angostura has been legally abolished, and Ciudad Bolivar has taken its place. Dr. Siegert's manufactory has been removed to Trinidad, and there he has obtained an injunction against Dr. Meinhard for infringing his title of "Aromatic Bitters," put up in style similar to his. In Germany an action had failed for the reason, it was said, that the German trade mark law did not recognise the peculiarity in the style of wrapping the bottles as forming any part of the trade mark, and the imitation of this was the chief point relied on by the plaintiff. Evidence was produced to show that certain purchasers had actually been misled by the similiarity in appearance, and the result was that Mr. Justice Fry ordered an injunction to restrain Dr. Meinhardt from using in Great Britain the term Augostura Bitters in such a manner as to mislead.

GOODALL'S YORKSHIRE RELISH.—THE WILLOW-PATTERN PLATE.

A case was tried before the Master of the Rolls, last month, in which Mr. Powell, the surviving partner in the firm of Goodall, Backhouse, and Co., Leeds, sought to register the label of the "Celebrated Yorkshire Relish," part of which consists of the well-known "willow-pattern plate." The application was opposed by the proprietor of Pratt's Club Sauce, who had also used the same device on his label, which had been registered. Both parties also sought to register the "willow-pattern plate" as a separate trade mark, and in this respect each opposed the other's application. Mr. Chitty, Q.C., appeared for Mr. Powell, and Mr. Caldecott for Mr. Pratt. Mr. Chitty stated, in reply to his Lordship, that both were old labels, not derived from one owner, as was sometimes the case, but independent trade marks. The Master of the Rolls said it was quite possible both might be entitled to the trade mark. Mr. Chitty said his clients did not contest Mr. Pratt's right to the trade mark; his business did not compete with them, for it was only a small trade comparatively, whilst theirs was a very large one, and if he had not objected to their registering their label, they would not have ontested his right to register the "willow-pattern plate" ingly. The Master of the Rolls said the Commissioners requently registered two similar marks, if they had been in use or some time. In fact, he had been astonished at the great poverty of invention amongst British tradesmen; the number of ocks and hens, and birds of the same sort sent in for registraion was something marvellous. They seemed to be able to hink of nothing but the commonest objects. The rule which he ad adopted in consultation with the Lord Chancellor, who, like imself, was one of the Commissioners, was not to register more than three. If there were more than that number, they id not register at all. Mr. Chitty said his firm had used it ince 1866. In 1874 they commenced proceedings against nother person who attempted to pirate it, and stopped him, nd then Mr. Pratt wrote claiming the trade mark. Mr. Powell eplied, saying he should insist on his right to use it, and after some correspondence Mr. Pratt conceded it. Mr. Caldecott said Mr. Pratt had used the mark since 1864, and it must have come to the knowledge of his friend's clients before 1866. The Master of the Rolls asked if there was any evidence that they did know of it. And did Mr. Pratt say he did not know of Messrs. Goodall using it before 1874? Mr. Chitty: No. Mr. Caldecott said if that question were put to him, it would be only fair to ask Mr. Chitty if his client denied that he knew Mr. Pratt had used it from 1864 to 1866. The Master of the Rolls said unless some evidence were adduced to show that they did know it, he did not think they were bound to prove a negative. Mr. Caldecott said he must admit that if, having written in 1874 protesting against the user of the mark, nothing more had been done, he should be within the rule as to *laches*, and would now be too late to object; but for this circumstance, that when they did object, the answer they received from Messrs. Goodall contained a misstatement of fact—viz., that they had used the trade mark "for about twelve years," which would carry the date back to 1862, and by this they were misled. The Master of the Rolls ultimately decided that both were entitled to registration, both of the entire label and of the plate. There would be no order respecting costs on either side.—*Grocer*.

BRAND'S ESSENCE OF BEEF.—DENCE v. MASON.

We last month reported the release from prison of Frank Mason, the defendant in this case. He had been confined from the commencement of August until the week before Christmas, for contempt of Court, involved in the breach of an injunction which forbad him to use the name of Brand in connection with Essence of Beef and other articles, and to represent himself as the original inventor of the same. During his incarceration the Vice-Chancellor, Sir Richard Malins, received many urgent letters from defendant's wife, stating that in consequence of his imprisonment she and her children were reduced to very great straits, and begging that he might be released. Mr. Crump, the defendant's solicitor in the previous case, refused to make the necessary application for this purpose; Mr. Higgins, Q.C., his former counsel, declined to act without instructions; and, from compassion for the wife, his Lordship put the matter in the hands of the official solicitor. On December 18 Frank Mason was brought into Court, and declared on oath that he was not worth 5*l*., and could not possibly pay costs. He signed an undertaking not to repeat his offence until the hearing of the case, and was forthwith released. The Vice Chancellor, during the proceedings we hereafter refer to, stated more than once that in his opinion the defendant understood the undertaking to be perpetual, and that of his own accord he would never have renewed the action. It must have been done by the advice of some cunning solicitor, who saw that the undertaking was terminated by the hearing of the case. His Lordship regretted that he had released the defendant from prison.

On February 5 the case was re-opened, at the cost of the solicitor, in the Chancery Division of the High Court of Justice, before Vice-Chancellor Malins. The defendant's counsel had been instructed to defend the action, which sought to restrain him from using the name Brand in connection with Essence of Beef of his own manufacture.

Mr. Glasse, Q.C. (with him Mr. Bristowe, Q.C., and Mr. Freeman), were for Dence and Mason, the plaintiffs. Mr. Higgins, Q.C. (with assistance), defended. The case occupied the Court during the whole of February 5, 6, and 12, and part of February 13, being prolonged by the necessity of proving *viva voce* what had already been proved and proved again by affidavit, a course made necessary by the announcement of the defendant's counsel that they would admit nothing.

On February 13 the Vice-Chancellor gave his judgment, going over the history of the case from the first commencement of the business. More than 40 years ago, H. W. Brand had a business of cook and provision merchant at 11 Little Stanhope Street. He became a bankrupt, abandoned his wife, and left the country. To provide for his wife a friend purchased the business, and placed her in the position of its manager, which she retained from 1844 to 1873. In 1858, her nephew, Frank Mason, then between 16 and 17 years old became assistant in the kitchen at weekly wages. In this he remained until the business changed hands in 1873. Mrs. Brand never found any capital, nor had any other interest in the business than that of manager, and F. Mason was never anything but a paid servant. In 1873 the owners sold all interest in the business of Brand & Co., at 11 Little Stanhope Street, to Thomas Dence for 5,000*l.* Brand's beef and other specialities then had a large sale and great reputation. Soon after, the connection between F. Mason and the firm of Brand & Co. ceased. He had never been a partner nor had any interest in the business. As a skilled manufacturer of Essence of Beef, Mason had a perfect right to make it, to advertise his product as the best in the market, to say he had been with Brand & Co. and came from Brand & Co.; but he had no shadow of a right to represent his preparations as those of Brand & Co., or that he was the original inventor, or was part of the firm of Brand & Co., or to do anything calculated to lead the public to buy his goods as those of Brand & Co. Legitimate trade, however, he entirely neglected, and devoted his whole energies to a course of fraud. The Vice-Chancellor said that every possible method of infringing the trade-mark and rights of the plaintiffs' he had practised, and had made continuous fraudulent representations. He had done his utmost to bring his preparations before the public in ways calculated to cause them to be mistaken for those of Brand & Co. He had sought for a person of the name of Brand in no way connected with the original firm, and had induced him to enter into partnership. Under the cover of this agreement, which the Vice-Chancellor described as merely nominal, he had advertised as Brand, Mason & Co., and represented himself to be, if not the sole original firm, at least a very important portion of it. Being restrained from this he had continued to use the title Mason and Brand long after his connection with the latter had ceased; he had at different times issued labels and circulars in close imitation of those of Brand & Co.; had proclaimed himself the original inventor of the articles, and had represented those of Brand & Co. to be mere imitations; he had induced a shopkeeper at 5 Little Stanhope Street to become his agent, and had placed up notices so conspicuous as to lead the public to believe that that was the shop of the original firm.

During the examination of Frank Mason three labels were put in, each claiming that he was the original inventor, and all closely similar in type, character, and general appearance. Two, which had been obtained before the commencement of the present action, were denounced as forgeries, the third published since was admitted to be the defendant's. The Vice-Chancellor remarked that it was somewhat remarkable that the supposed forgeries should have so faithfully anticipated the shape and appearance of the labels the defendant subsequently issued, or that the defendant should have copied the forgeries so minutely, and at the same time it was not quite clear what motive could have actuated the supposed forgers.

George Mason, the defendant's brother, and during 1876-77 his traveller, said that preceding actions had reduced him to driving a hansom cab for a livelihood. Before that, but quite without the knowledge, advice, consent, or desire of his brother, he had on his own account commenced the manufacture of the Essence of Beef, which he sold under the title of nephew of Brand & Co. That is to say, while his brother was still under injunction, he (George Mason) had done things almost exactly those for which his brother was condemned. He was quite sure his brother did not know of it till after he had started, but in cross-examination admitted that they had had some conversation in which he told him that he was *going to start.*

Mrs. Hope, of 5, Little Stanhope Street, who had become the agent for the Essence of Beef, said that before she was agent the constant influx of persons who came for some undefined cause connected with Essence of Beef, gave her such annoyance that she wished to become agent. Her shop then had the name Hope conspicuously over the door, and the number 5 on each side of the window. The shop of Brand & Co. was on the opposite side of the way, was much larger, and had the name clearly indicated. Mrs. Hope could not say whether the first proposal of the agency came from the defendant or herself; they had "talked it over." She had never sworn to an affidavit in connection with the case, but remembered signing a paper at a lawyer's office. That paper turned out to be an affidavit which stated that the defendant had *asked* her to become agent.

The last witness for the defence was William Allen Johnson, who stated that a paper ready prepared was brought to him in his shop, and that he had signed it, after reading it and striking out some words. Could not say if it was an affidavit, and could not remember if he had kissed the book at the time; this after giving a somewhat detailed account of occurrences, which had taken place some time before.

The Vice-Chancellor, in giving his judgment, said that this man was so thickheaded and stupid that no reliance could be placed on his evidence. The counsel for the defence frequently complained that he was embarrassed in the conduct of the case, but the Vice-Chancellor remarked that his embarrassment was of his own making. His Lordship frequently made very strong comments on the conduct of the defendant's solicitor, witnesses, and even of the counsel for the defence, and said that a more scandalous waste of public time had not come beneath his notice. He considered that when the defendant Frank and his brother George Mason had been brought before the Court, it was deliberately intended that they should commit wilful and corrupt perjury. They had been made to give the lie to a number of most respectable witnesses, who had given evidence on affidavit which could not be shaken on cross-examination. He was of opinion that neither brother could be believed when in contradiction with any other witness. Mrs. Hope seemed to have come so much under the malign influence of Mason, that she too had made statements she knew to be untrue. He granted a perpetual injunction against Frank Mason, restraining him from representing himself or his manufactures as in any way connected with the firm of Brand and Co., and condemning him to pay all costs.

Mr. Glasse, Q.C., on behalf of the plaintiffs, then applied for an injunction to compel Mr. Crump, sole remaining partner in the firm of Woolf, Crump, and Clarke, solicitors, Queen Street, Cannon Street, to pay all costs of the action since Dec. 18, when the defendant was released from prison. During his cross-examination Frank Mason was compelled to admit that his solicitor, Mr. Crump, was carrying on the case at his own expense, that the latter had no hope of obtaining money from Mason, and that Mason had paid him none since Christmas. Had the defendant succeeded in his case, he could have claimed heavy damages for loss of business and wrongful imprisonment, besides all costs. On these damages and costs, Crump, the solicitor, would have had a lien to pay all his account as between attorney and client. There was also a possibility that the harassed plaintiffs would have made an offer of money as the price of freedom from further litigation. Numerous cases were cited which proved that the Vice-Chancellor had the power to compel the solicitors to pay costs in actions in which they had indemnified their clients from loss, or in which the nominal clients were paupers not pleading *in formâ pauperis*, or were mere puppets in their solicitors' hands. The nominal defendant in this case had admitted that he was practically a pauper, and Mr. Crump, as solicitor in previous actions, must have known the whole facts of the case.

The Vice-Chancellor willingly gave leave to serve a notice on Mr. Crump to show cause why he should not pay the costs as defined, and said he should be heartily glad if the solicitor could be made to pay.

At the close of the proceedings his Lordship expressed the hope that he had heard the last of "Dence *v.* Mason," and that George Mason would not continue the trade he had commenced in Essence of Beef. The latter, who was in court, immediately proclaimed his full intention of continuing the business in spite of all that had been said.

BANKRUPTCIES AND LIQUIDATIONS.

D. H. Buxton, Manufacturing Perfumer, South Lambeth and North Brixton.

The debtor, Dick Hadlow Buxton, of Mary Street, Dorset Street, South Lambeth, and of 35 Cowley Road, North Brixton, manufacturing perfumer, trading as D. H. Buxton & Co., has petitioned for the liquidation of his affairs, and the case came before Mr. Registrar Hazlitt on the 11th inst. Mr. H. Montagu said that he was instructed to apply for the appointment of a receiver of the estate, and for an interim order staying further proceedings in several actions. The liabilities (secured and unsecured) amounted to about 6,000*l.*, and the debtor in an affidavit in support of the application stated that his assets, consisting of stock, book-debts, and plant used in his business, were of the estimated value of 500*l.* He was being sued by Messrs. John S. Elmore & Co., of 77 Coleman Street, for the recovery of 56*l.* 14*s.* 7*d.*; by Mr. M. A. Worms, of 24 Leadenhall Street, for 27*l.* 16*s.* 11*d.*; and Messrs. Hilton & Ryder, of Great Suffolk Street, for 11*l.* 3*s.* 8*d.* In reply to the Registrar, Mr. Montagu said that Mr. H. E. Broad, accountant, 35 Walbrook, was proposed as receiver, his fitness and responsibility being duly deposed to. His Honour made the appointment, and granted an interim injunction. The following appear in the list of creditors:—

	£	s.	d.
W. West, 14 Waterloo Place, Brighton	1,440	0	0
L. E. Walters, Camden Crescent, Bath	1,059	10	11
F. J. Hunt, Bow Bridge Soap Works, E.	821	15	5
M. A. Worms, 24 Leadenhall Street	207	16	11
C. J. B. Boyer, 23 Castle Street, E.C.	172	14	11
E. T. Crookenden, Yeoman Mills, Deptford Lower Road	96	2	2
— Klecman, 57 South Street, Lambeth	75	0	0
Elmore & Co., 77 Coleman Street	56	14	7
Horner & Sons, 20 Bucklersbury	43	9	1
Hall & Berrington, Hall Terrace, York Road, City Road	28	8	10
Fell & Briant, Glasshouse Yard, Aldersgate Street ..	24	0	0
Skipper & East, Eastcheap..	22	10	0
Honchin & Co., Bridport Place, Hoxton	21	19	3
C. Stovell, 41 Southville, Wandsworth Road	12	12	11
Hilton & Rider, Great Suffolk Street	10	4	8
Proprietors of The Chemist and Druggist	9	8	6
Creditors for advances on Consignments.			
J. M. Lewis, Glenbrook, Arklow, Ireland	576	0	0
McIlwraith, McEacharn & Co., Leadenhall Street ..	280	0	0
London and South-Western Bank (bills under discount)	249	13	3
Peters & Co., 34 Leadenhall Street	233	6	8
J. Sutherland & Co., 34 Lime Street	150	0	0
L. J. Mason, Australian Avenue, Barbican	13	11	0

The meeting of creditors will be held on the 26th inst., at 12 o'clock, at the offices of Mr. Montagu, 5 and 6 Bucklersbury.

Wm. Dixon, Chemist and Druggist, 8 Upper Prospect Place, Southampton.

This bankruptcy occurred in August, 1863, and the debts were returned at 1,901*l.* 18*s.* 5*d.*, a deficiency of 1,544*l.* 3*s.* 6*d.* being disclosed upon the accounts. A dividend meeting was held last month before Mr. Registrar Murray, and the official assignee reported that the sum of about 340*l.* was available for distribution. A resolution was passed accordingly.

C. Jackson, Chesterfield.

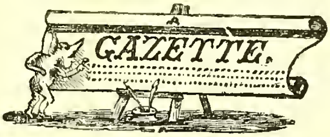
A meeting was held on the 4th instant at the offices of Mr. Cowdell, solicitor, of the creditors of Charles Jackson, chemist, of Bentwell Street, Chesterfield. Mr. J. W. Rooth presided. The debtor's statement of affairs showed:—Unsecured creditors, 133*l.* 10*s.*; creditors for rent, rates, &c., 8*l.* 6*s.*; total, 141*l.* 16*s.* Assets:—Stock-in-trade, 33*l.* 17*s.* 6*d.*; furniture and fittings, 5*l.* 2*s.* 6*d.*; household furniture, 10*l.*; total, 49*l.* The debtor had no offer to make, and the creditors decided to liquidate the estate by arrangement. Mr. Lander, accountant, Chesterfield, was appointed trustee, and Messrs. Rooth, Cargill & Evans a committee of inspection. Mr. Cowdell was entrusted with the registration of the resolutions.

The following is the list of creditors:—

	£	s.	d.
Rooth, J. W., Chesterfield	31	6	0
Clarke, Bleasdale & Co., York	18	4	0
Evans, J., Chesterfield	25	0	0
Southall Bros. & Barclay, Birmingham..	8	17	10
Tidman & Sons, London	5	11	0
Ford & Shapland, London	2	12	10
Beaufoy & Co., London	1	14	8
Daniel & Haslam, Chesterfield	3	11	11
Cargill, Chesterfield	1	10	0
Glossop, Chesterfield	2	15	0
Shipley, Chesterfield	1	10	0
Wheen, J. B., & Co., Sheffield	4	8	0

J. H. D. Jenkinson, Chemist and Druggist, Sheffield.

This case came before Chief Judge Bacon last month on appeal from the Sheffield County Court.* The debtor, who carried on business under the style of J. H. D. Jenkinson & Co., filed his petition for liquidation in May, 1876, and afterwards furnished a statement of affairs, showing liabilities amounting to 3,297*l.* 5*s.* 1*d.*, against assets 1,399*l.* 13*s.* 6*d.* Mr. Winslow, Q.C. (with Mr. Knight), appeared in support of the appeal, and stated that the appellant was Mr. F. E. Leggoe, accountant, Sheffield, who complained of an order of the County Court judge, requiring him to bring in his accounts and bills of costs as receiver and manager, and also as trustee of the estate, in order that the same should be taxed by the proper officer. After the debtor filed his petition, it was resolved that his affairs should be liquidated by arrangement; but negotiations followed, which resulted in the sale of the estate for a sum sufficient to pay the creditors a composition of 5*s.* in the pound, in addition to the costs. The composition was guaranteed by a Mr. Ryland, and it was arranged that the debtor should give a bill of sale to Mr. Ryland over a portion of his property, the creditors to hold the deed as security. The question of costs had then to be settled, and on July 3, 1876, the debtor signed a memorandum by which Mr. Leggoe's charges as receiver and manager were fixed at 100*l.*, and as trustee at 50*l.*, the solicitor's charges being assessed at 50*l.* 6*s.* 7*d.* Under these circumstances it was submitted that it was not competent for the County Court judge to make the order appealed from. Mr. Doria, for the debtor, argued that a proper order had been made, and that in the interests of creditors as well as of the debtor the charges of Mr. Leggoe ought to be taxed. Sir J. Bacon was of opinion that the order of the Court below rested upon an erroneous basis. The creditors had agreed to sell the estate for a sum sufficient to pay a dividend of 5*s.* in the pound, and all the costs, and the amount of those costs, had been arranged. The interests of the creditors were not affected by the subject-matter of the appeal; for, assuming that the charges were reduced upon taxation, the creditors would not be benefited thereby, as the proceedings were virtually at an end. The order of the County Court judge could not be sustained, and the appeal must be allowed.



LIQUIDATIONS BY ARRANGEMENT OR COMPOSITION.

Notices of first meetings of creditors have been issued in re the following estates. The dates are those of the "London Gazette" in which the notices first appeared.

Alexander, Francis, Princes Terrace, Darlington, Durham, medical practitioner. January 16.

Anderson, Alfred George, 45 Lancaster Road, Westbourne Park, late Harlsden Green, Willesden, and Ladbroke Grove Road, North Kensington, public analyst. February 4.

Basham, James Frederick Chieslie, East Holborn, South Shields, botanist and cart proprietor. January 29.

Blumm, John, 27 Park Place, Liverpool, hairdresser and dentist. Jan. 17.

Butcher, John, 23 Hoghton Street, Southport, dentist. January 16.

Challoner, John Bourne, Challoner, William, and Challoner, John Joseph, trading as John Challoner & Sons, Providence Place, Brighton; and Preston Road, Preston, aërated water manufacturers. January 21.

Elliott, Henry Thresher, 68 East Street, Chichester, aërated water manufacturer. January 29.

Jackson, Charles, Chesterfield, Derbyshire, druggist. January 17.

Keavey, Patrick George, trading as P. Keavey & Co., York Street, Liverpool, drysalter. January 28.

Moore, Edward, 122 High Street, Cheltenham, chemist. January 11.

Slack, Josiah William, Wormley, Herts, chemist, grocer, and draper. January 16.

Stacey, John, Bangor, manufacturer of mineral water. January 12.

Tolley, William Augustine, 23 Thornhill Place, Caledonian Road, and Puller Road, High Barnet, chemist's assistant, late carman. January 8.

Whitehouse, Thomas Henry, Stapleton Road, Bristol, surgeon. Jan. 7.

DIVIDENDS.

Davies, William (bankrupt), Clifton Street, Aberdare, commission agent and aërated water manufacturer. Div. 2*s.* 1½*d.* J. D. Thomas, 35 Fisher Street, Swansea.

Johnson, Frederick, jun. (liquidation), Derby Road, Nottingham, chemist. 1st and final div. 1*s.* 6*d.* H. Young, 29A Long Row Central, Nottingham.

SCOTCH SEQUESTRATION.

Faulds, James, & Co., Glasgow, manufacturing chemists, and Faulds, James, and Wood, Robert James, as partners thereof, and as individuals. January 31, with protection.

DIVIDEND UNDER SEQUESTRATION.

Sinclair, Veitch, Albany Street, Edinburgh, physician. 1st and final. F. W. Tilly's, 9 North Street, David Street, Edinburgh, February 11.

PARTNERSHIPS DISSOLVED.

Cross & Wright, Scarborough, surgeons.

Fleming & Smyth, Padiham, surgeons.

Parke & Greenway, West Derby, surgeons.

Heyland & Little, Readcar, chemists.

Sutton & Nuthall, Norwich, chemists.

Wright & Smith, Finchley, surgeons.

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* See The Chemist and Druggist, December, 1877.

Inquest Courts.—Following a suggestion made by Dr. Sedgwick Saunders, the Corporation of the City of London is erecting premises in Golden Lane to serve as an Inquest Court. A decided necessity.

It is said "that glass eyes for horses are now so beautifully made that they completely defy detection." The imitation must be wonderful indeed, for we understand that the horses themselves cannot see through the deception.—*Fun*.

Already Bitten.—A pharmaceutical contemporary, whose head quarters are in Coleman Street, tells us in its last that strenuous efforts are being made to suppress hydrophobia, and, further, that "the Legislature is taking steps to avert it." Too late, too late; and it was such an interesting Legislature.

A French Patent has been taken for perforated pills. The inventor declares that the great trouble about pills is that they pass through the body undissolved; but he thinks if they were pierced the gastric juice of the stomach would be able to get inside them and empty them of their virtues.

The Telephone in Germany.—The Germans seem to have adopted the term "Fernsprecher" (distance talker) for the telephone. The instrument had, however, a narrow escape of being distinguished in that land as the "Doppelstahlblechzungensprecher" (the two steel plate tongue speaker).

Doctors in Russia.—The Russian law as it now stands compels a medical man to visit anyone who sends for him, under penalty of a fine of from five to ten roubles for the first refusal, from ten to fifteen for the second, and from fifty to one hundred for the third. Moreover, any physician so offending, who may be in the service of the Government, is liable to be dismissed. In 1869 a similar law was repealed in Prussia, and the profession in Russia is striving to obtain a similar concession.—*Medical Press and Circular*.

Threatened Strike of Doctors at Havre.—The *Medical Times and Gazette*, quoting from a French journal, says that a great sensation was produced at Havre by the issue, during the month of January, of a circular to their patients by the doctors of that city. It is nothing less than a menace of a strike on the part of the doctors, who announce a rise in the tariff of their fees. In future every visit sought for as urgent, or at a fixed hour, is to be charged as a double visit, and every night-visit will be taxed according to established classes, 10 fr., 15 fr., or 20 fr. The *Le Havre* says that this exorbitant pretence has excited general indignation.

That Thocht never Struck Him.—A Highland laird was checked off in his financial accounts by his wife on his return. He had called at the chemist's for a draught for the babe of three years old. She said, "I see ye canna buy poothers for bairns; I wud 'a gotten twa as big as yours for a shillin'." Jamie replied, "Hoo wud ye manage that?" "Weel, I'll tell ye. He wud spier hoo auld the bairn wus." "Ay, of coorse, an' I tell't him it wus three years auld." "Weel, if it had been me, I wud say the babe wus six years, an' I wud 'a gotten ane as big again, and then divided it in twa." "That thocht never struck me," answered Jamie.

Sore Nipples.—The following instructions have been published in the *British Medical Journal* from correspondents in reply to a query in the same journal:—Dr. Munro, of Bradford, writes:—During the last month or so of pregnancy wash the nipples with equal parts of brandy and water morning and evening, and if there be any cracks apply a lotion of sulphurous acid, about 1 to 8, on lint. Proved. Mr. Wills, of Chester, says:—If E. R. S.'s patient will bathe her nipples twice or thrice daily from this time till her confinement with a lotion of tincture of arnica and water (1 to 7), and take care that there be no pressure from corsets or dress, she will, I believe, be free from sore nipples afterwards. During lactation, a lotion of brandy and water (1 to 8) may be applied to the nipples between the infant's feeding hours, if they are inclined to be tender, taking care to bathe them with warm water immediately before the child is put to the breast.

Trade Notes.

Mr. S. V. Holgate, formerly of 29 Long Row, Nottingham, has purchased the business carried on at 20 High Ousegate, York, by the late Mr. Hayland.

⁂

Messrs. Symes & Co., of Liverpool, have connected their two establishments (one in Bold Street and the other in Hardman Street) with Professor Bell's Speaking Telephone, and they tell us the system works admirably.

⁂

The well-known firm of Avery Brown & Co. of Halifax, Nova Scotia, has been altered in style to Brown & Webb. Mr. Charles Edward Brown retires, and Messrs. Thomas Avery Brown and Wm. H. Webb continue to conduct the concern.

⁂

La Trobe's pure soluble cocoa, prepared by Mr. Henry La Trobe, of Highbury Park, Bristol, seems to well deserve the testimonial which Mr. Stoddart has given to its purity. The proprietor offers it to the public through chemists *only*.

⁂

We desire to add to the list of British exhibitors at the forthcoming Paris Exhibition, which appeared in our last, the following:—F. Darton & Co., 45 St. John Street, E.C., spectroscope for chemical analysis; Peter Mumford & Son, Farringdon Road, E.C., pure crushed linseed.

⁂

We have received a sample of Dr. Nichols' Sanitary Soap. Dr. Nichols is well known for his contributions to sanitary science, and in this soap it is claimed he has combined with a pure olive oil soap antiseptic elements which will destroy fungoid impurities in the hair, skin, or teeth. It is a very pleasant soap to use.

⁂

A large wholesale firm in this city sends us a letter received by them from the Mayor of Stafford, asking for a donation towards a new refuge, which is being erected in that town for the moral and spiritual training of female prisoners who have been committed to "goal" and undergone their punishment. "The building," says his worship, "is a large one, and has been *taken up* and subscribed to by the noblemen and gentlemen of the country." May we ask what business these noblemen and gentlemen had to take the building up after it had been erected? The letter, which seems to be a circular one, goes on to ask aid, "knowing the great commercial connection you have with the county." Our friends concisely characterise this attempted levy as "pious black mail," and we think provincial mayors and county noblemen ought to remember that the members of London firms have quite enough to do with metropolitan claims, and should be spared appeals on behalf of institutions which they cannot possibly know much about.

⁂

J. Richardson & Co.'s Annual Price Current.—For many years the well-known firm of J. Richardson & Co., of Leicester, have scattered broadcast over the world catalogues of special classes of their preparations. The whole of these are now incorporated in the handsome quarto annual or Year-Book before us. It is divided into six parts, the first four of which in their proper order are lists of drugs, chemicals, and pharmaceutical preparations; surgical instruments and medical appliances; medical specialities; and pearl-coated pills. This latter section contains over five hundred forms, any of which can be supplied in quantity from stock on receipt of order. Next comes a decidedly new and, we think, valuable feature in price lists. It is entitled "Medical Annotations," and is intended for the use of busy practitioners. It consists of a number of abstracts from the various medical journals of the year, which give accounts of the properties and mode of administration of new remedies. The abstracts are now arranged alphabetically under the heading of the remedy they describe. The final section of the list is a diary, ruled, and giving four weeks at an opening. This catalogue can only have the effect of increasing the respect with which the Leicester firm is regarded by the trade and profession, and of extending their business relations.

EXCHANGE COLUMN.

TERMS.—Announcements are inserted in this column at the rate of one halfpenny per word, on condition that name and address are added. Name and address to be paid for. Price in figures counts as one word.

If name and address are not included, one penny per word must be paid. A number will then be attached to the advertisement by the Publisher of THE CHEMIST AND DRUGGIST, and all correspondence relating to it must be addressed to the "Publisher of THE CHEMIST AND DRUGGIST, Colonial Buildings, Cannon Street, London, E.C.," the envelope to be endorsed also with the number. The publisher will transmit the correspondence to the advertiser, and with that his share in the transaction will cease.

FOR DISPOSAL.

No. 1. Pindar's piping press, four grain, 30*s.* 26/146.

Have Lescher's cabinet, equal to new, cost 2*l.* 2*s.*, price 1*l.* 10*s.* Hickman, Redhill.

A 2-gallon graduated glass percolator. What offers? J. Wood, New Street, Barnsley.

Dozen Hoff's Malt Extract, clean, carriage paid, 12*s.* Craven, Batley Carr.

1½ lb. ol. lavand., Mitcham, 1873, splendid condition. What offers? 3/141.

Pharmaceutical Journal, 1877, complete; ditto, 1878, posted same day as received. What offers? Butterfield, Chemist, Shipley.

Human female skull, with lower jaw and many teeth; good preservation; 10*s.* 6*d.*, or exchange. Horniblow, Watchet, Somerset.

Pharmaceutical Journals from 1868 to 1878, unbound. What offers? Patent medicines or cash. Fowler, Chemist, Boston.

Dentist's operating chair, cost 35*l.*; Barrow Evans' restorer, 6*s.* 9*d.* dozen. Harrop, Chemist, Middleton, Manchester.

Microscope, English make, with numerous accessories, below half price. Brown, Chemist, Dover.

Twelve dozen porous plasters, 7*s.* per dozen, will exchange for saleable patents at 9*s.* G. E., 416 Stockport Road, Manchester.

Mahogany counter, with drawers, 16 feet long, also 105 mahogany fronted drawers, gold labelled, 16 feet long, good condition. 6/148.

Attfield's "Chemistry," 7*s.*; Bentley's "Botany," 7*s.*; Royle's "Materia Medica," Mohr's "Pharmacy," 3*s.*; "Cæsar," 1*s.* 6*d.*; others cheap. W. Robinson, Mr. Sindall, Knaresboro'.

Cheap, Maw's 4-quart still, complete, cost 15*s.*; Zuccato's papyrograph, cost 42*s.*; both good as new. What offers, exchange or cash? 38/143.

Chemist and Druggist, February, 1860–61 to 1877, inclusive (Nos. 44, 45, 79, 92, and March 75 missing). 5*l.*, or offers for part. Nicholson, Brigg.

Counter case by Maw & Son, fig. 95, 4 feet long, 18 inches wide, 8 inches high, cost 6*l.* 18*s.*, price 3*l.* 10*s.*, nearly new. Done, Chemist, Coventry Road, Birmingham.

Attfield's "Chemistry," fourth edition; Bentley's "Botany," second edition, as good as new. What offers? A. J. Stratford, Market Rasen.

Several 2-gallon carboys and various specie jars. Gerring, Witney.

Two doz. Burgoyne's spirit lamps, 1 doz. Dr. Levenston's African rheumatic oil, 4*s.* 6*d.*, 50*s.* the lot. Bell, Chemist, Greenock.

Kay Shuttleworth's "Chemistry," 3*s.*; Wilson's "Chemistry," 3*s.*; "1,000 Conjuring Tricks Explained," 3*s.* Bismuth, 153 Conybere Street, Birmingham.

A mahogany dispensing counter, with ground-glass screen, height 4 ft. 9 in., length 4 ft. 7 in., width 1 ft. 10 in., cost 15*l.*, price 8*l.* Keene & Ashwell, 74 New Bond Street.

One gallon tincture press, Maw's fig. 2, price 25*s.*, cost 35*s.*, never used; "British Homœopathic Pharmacopœia," 1870, 5*s.* 6*d.*, post free, published 10*s.* Marson, Chemist, Stafford.

Dows Clark iced cream soda machine, six taps, cylinder, tin pipe, and everything complete, in splendid order; also mahogany desk; both very cheap. Read, 2 Market Terrace, Upper Holloway, N.

Stoppered rounds, good condition, labelled, 24 quart, 18 pints and half, at 9*d.*, 24 pints at 7½*d.*; 1½-gallon pear-shape, cut stopper, carboy, 4*s.* R. Hollick, 75 Barford Street, Birmingham.

Owen's "Conspectus of the British Pharmacopœa, with other useful information for Chemists," interleaved with plain paper for private notes, 1*s.* 6*d.* each, published at 3*s.* 6*d.* Publisher, 285 Camberwell Road.

Chemist and Druggist and *Pharmaceutical Journal*, 1876-77, quantity odd numbers. Either of the above posted 7 days after publication. 7 coppers ess. Limonis, 12 bottles ol. citronelle. What offers? Bygott, Huddersfield.

One-sixth doz. Nestle's milk food, retail 2*s.*; one-sixth doz. Lea & Perrins' Taraxacum; ether sulph. rect., about 8 lbs. 3*s.* 6*d.* per lb.; sample, 4*d.* What offers, or exchange? Bingham, Chemist, Grimsby.

Gallon copper still and condensing tub; two traveller's cigar cases, to carry in hand; cash book, with Bramah lock; number of brass letters for fixing on glass; two sets dispensing scales, box and beams, glass pans. Scruby, Acton, W.

The fixtures of a chemist's shop, consisting of five nests of drawers, with mahogany fronts and labels in black on gold ground, cupboards below with sliding doors and shelves above, in excellent condition, height 9 feet. For particulars apply to Mr. Winfield, 31 Queen Street, Derby.

Offers wanted for "Pharmaceutical Latin Grammar;" Steggall's "First Lines for Chemists and Druggists;" and Pereira's "Selecta e Prescriptis," all in good condition, together or separate. Nella, 36 Fassett Square, Dalston.

Six 100 gross bags white tapered daffy corks, 4½*d.* per gross; also 4 gross white tapered vial corks, 4*d.* per gross. Sample sent on receipt of one stamp. Bags not divided. Frederick Gibson, Chemist, the Post Office, Gooch Street, Birmingham.

Virgin otto in the original bottles, about 3 ozs. each, what offers? Two 4*s.* 6*d.* Russell's kalonica; two 2*s.* 6*d.* Thresh's rose odontine; one ivory hair brush, cost 10*s.*; five Cathery's selzine, all half price. Butler, Chemist, Tunbridge Wells.

To Minor Students.—An herbarium of over 100 plants representing all the important natural orders, and illustrating all the salient points in structural botany, invaluable to study side by side with the text-book, 7*s.* 6*d.*, carriage paid. J. Tully, Chemist, Tunbridge Wells.

Maw's stoppered bottles, in boxwood cases—15 6-oz, 16 4-oz., 17 2-oz., w. m., 33⅓ discount Maw's price list; 6 7*s.* 6*d.* Douglas's Hair Restorer; 5 2*s.* Beetham's Hair Wash; 1 5*s.* Poudre Unique; 1 3*s.* 6*d.* Delcroix Vegetable Extract, 15*s.* the lot. Toronley, Keswick.

Quantity pomades, W. F., 2 oz., 14*s.*; boxwood, green pomades, varnished caps, 2 ozs., 9*s.*; 25 gross sauce, stop and cork, as York relish, 11*s.*, plain, 9*s.*; 20 gross 6 oz. Limes W. F., 9*s.* Fitch, 167A Hemingford Road, London, N.

Handsome Spanish mahogany dispensing screen, nearly new; mahogany wall case, 11 feet long, 9 feet high, bottom case 14½ inches inside, top 8 inches inside, mirror backs between cases; also wall fixtures, drawers, &c. Turner, 110 City Road, Manchester.

108 gross W. F. vials, 1 oz., 3*s.* 6*d.*, 1½, 4*s.*, 2, 5*s.*; quantity 1*d.* inks, oils, gums, polish, leading shapes, 2*s.* 3*d.* gross; 15 gross plain feeding bottles, green, 9*s.*, white, 11*s.*; 25 gross medicals, oval and flats, 3 ozs., 7*s.*, 4 ozs., 7*s.*, 6 and 8 ozs., 8*s.* 9*d.* Fitch, 167A Hemingford Road, London, N.

One of York Glass Company's 55*s.* specie jars, apothecaries' arms, price 30*s.*; superior three-light chandelier, made to order for chemist's shop, cost 50*s.*, reason of disposal using petroleum, price 28*s.*; 8-day shop clock, diameter 15 inch, nearly new, 21*s.*, cash. B., 11 Bridge Street, Goole.

In good condition, second-hand, pitch-pine wall fixtures, about 130 drawers, glass tablets and knobs, shelving supported by mirror pilasters, moulded cornice, with useful cupboards on top of cornice if required. C. Harrison, Chemist, Moss Side, Manchester.

Air pump, by Howe, cost 3l. 13s., for 2l. 10s. new; two gas bags, 20 in. by 12 in., 15s. each, new; also Statham's chest, Liebig's condenser, platinum dish, refrigerator, retorts, retort stand, gazogene. For price apply, Horniblow, Chemist, Watchet, Somerset.

Pulvermacher's 15 guinea galvanic apparatus, complete, nearly new, consisting of chain batteries, galvanic belt, combined chain belts, spiral spring for intermittent current' drawers, suspender, handles, &c., packed in neat morocco case, in exchange for binocular microscope, with English objectives, or cash offers, cheap. S. Baker, Eastgate, Chichester.

Nests of drawers, window enclosures, glazed cases, shop jars, all sizes and colours, show bottles, specie jars, black store bottles, shelving, and other requisites, together or separately; also tobacconist's handsome show cases, jars, &c.; a capital Wheeler & Wilson's sewing machine, price 2l. 10s.; also a handsome vase of satin flowers, price 3l. 10s. Apply, 294 Old Kent Road.

Offers wanted for all or separate articles. 2 specie jars, white enamel glass with gilt covers, elegantly labelled inside, gilt shaded scroll, height, with covers, 25 inches; 9 doz. white shop jars and covers, height 4 inches, diameter 2¾ inches; colossal bust of Hahneman; 6 gross half-ounce white vials, squats, clean. Apply, Field, 3 Victoria Buildings, Pimlico, S.W.

Two upright mahogany dispensing screens—one 6 feet long, 2 feet 4 high, 6 inches deep, the other 7 feet long, 2 feet high, 6½ inches deep, 3 doors to each, shelf at back, and brass rods at front and ends; two flat mahogany cases, with plate glass in lids, 16 by 16½ by 3½, and 12½ by 20 by 3½ outside, all in good condition. What offers in cash? D. Smith, Stroud, Gloucester.

Offers wanted for the following:—*The Pharmaceutical Journal*, odd numbers from June to end of 1873, six numbers short 1874, Feb. 1 Aug. 14, short in 1875, numbers clean and perfect for 1876 and 1877; *The Chemist and Druggist* for 1873, 1874 (number for March short), 1875 and 1876 perfect, 1877 Feb. and Aug. numbers short. Pickburn, Chemist, Kidsgrove.

Nearly new, one pair 5 feet French burr-stones, on iron frames, gearing, &c., complete; also two pair 4 feet French burr-stones, on iron frames, complete; two conical mills, by Millburn; one large breaker, elevators, belting, shafting, &c.; one 3-ton weighbridge by Fairbank; can be seen at 106A Nente Street, Camberwell. Particulars of Mr. W. C. Key, Cypress Lodge, Walton-on-Thames.

Royle's "Materia Medica," Fowne's "Chemistry," "Druitt's "Surgeon's Vade Mecum," W. Jones's "Opthalmic Medicine and Surgery," together four illustrated manuals, 12s. (published 2l. 12s.); Clarke's "Diseases Females and Children," 3 vols., plates, 10s. (published 2l. 6s.); Thomson's "Dispensatory," capital copy, 5s.; Thomson's "Materia Medica and Therapeutics," 5s. (published 31s. 6d.); Turner's "Chemistry," 5s. (published 30s.); Erichsen's "Surgery," 3rd edition, 450 engravings, 10s. (published 25s.). H. Preston, 21 Clarendon Square, London, N.W.

Soda-water machine, to make 1,500 dozen per day, second hand, in good condition and working order; a double soda-water machine, has lead generator, copper gasometer in oak tub, 2¼ inch double pumps. Bramah principle, 8-gallon cylinder on stand, dial and water gauges and quadrant rack, all pipes fitted with vertical combined engine and boiler, for 110l. 15s. 6d. For further particulars apply to N. G. Wilcocks, Back Street, Bath.

Handsome upright plate-glass counter case, by Treble, forming screen for dispensing-counter, with two doors to open in front and centre, one movable slide; inside fitted with three movable shelves, and polished black inside; surmounted with carved scroll and space for lettered glass (glass missing), 4 feet long by 1 foot 9 inches high by 6 inches deep. Price 5l. 10s. Also pill machine, almost new, price 17s. 6d. C. H. Cattell, 29 Snow Hill, Birmingham.

A quantity of shop rounds, 6 oz., 5s. doz., 80 oz., 14s. doz.; blue plug syrups, 10s. doz.; quarts, 10s. doz.; pints, 8s. doz.; a quantity of specie jars, with gold covers, &c., from 50s. the pair; a number of pear-shaped carboys, from 4s. 6d. each; cylinder ditto, from 1s. 6d. each; ointment jars of all descriptions and colours, a quantity of quart size oil bottles, glass caps, shield labels, new, 2s. 6d. each, 2 doz. 4-oz. glass capped ether ditto, 10s. doz.; marble mortars, mahogany fronted drawers, pill machines, fancy jars, &c E. Natali, 213 Old Street, E.C.

The entire fittings of a chemist, mahogany fronted drawers, with lockers under; 130 ft. mahogany fronted shelving; 36 ft. mahogany cornice; 12 ft. mahogany top counter; 4 ft. 6 mahogany counter and plate-glass screen on top; a 6 ft. 4 in. mahogany cupboard, with marble top; a 5 ft. ditto, with mahogany top; a desk with glass case in front; a 3 ft. bent glass counter case; 20 ointment jars; 3 carboys, cut stoppers; 2 specie jars; 8 mahogany sashes for window enclosure; an outside globe, lamp and bracket; ruby glass and lenses, 50l., a bargain. E. Natali, 213 Old Street, E.C.

A 6-ft. dispensing screen, glass case at each end. looking-glass centre, with marble slab in front, the glass cases fitted with looking-glass backs, and 4 shifting shelves with handsome tablets and fretwork, on top "Dispensing Department," the back of screen fitted with shelves for dispensing bottles, 8l. 10s.—a bargain; a 5-ft. 6 do. do., 8l.; a 6-ft.. as 165, 6l.; a 7-ft. do. do., 6l. 10s.: a 3-ft. 6, as 163, 50s.; a desk and case, as fig, 21, 65s.; a do. do., as 39, 45s.; sponge case, as 90, 80s.; a do. do., as 92, 5l.; sodawater stands, 61 and 62, 50s. each; an upright glass case, to stand on floor in front of counter, 4 ft. long, 3 ft. high, 12 in. deep, glass sides, marble top, 90s. E. Natali, 213 Old Street, E.C.

A 4-ft. bent plate-glass counter case, as 101, 90s., a 3-ft. 6 in., as fig. 101, 80s.; a 3 ft. 5, as 100, 75s.; a 3 ft. 8, as fig. 100, 80s.; a 6-ft., as 105, 6l. 10s.; a 6-ft., as 99, 6l.; a 6-ft., as 104, 6l.; a 5 ft. 9, as 98, 5l.; a 3 ft. 6, as fig. 16; a 12-ft. bent stout sheet counter case, 7l.—a bargain; a 5-ft., as 105, 6l.; a 5-ft., as 104, 110s.; a very elaborate plate-glass counter show case, bent glass, 50 in. long, 20 in. wide, 15 in. high, looking-glass falls at back, plate-glass sides, plate-glass shelf, polished edges inside, 6l.—a bargain; an outside globe lamp, ruby lenses, and glazed with ruby glass, only in use a few months, bracket complete, 5l., cost double. E. Natali, 213 Old Street, E.C.

Statham's cabinet, 3 guineas, 30s.; Southall's specimens, "Materia Medica," 1867, 15s.; Winchester bisulph. carbon; quart tinct. cannabis; 1 lb. potass. sulphuret; 1 lb. stanni protochlor; ½ lb. ferri ammon. chlor.; 1 lb. liq. ferri nitras; 4 lbs. barytæ nit.; 2 lbs. barytes pulv.; 1 oz. ol. cognac; 5 Chapman's salve, 1s. 1½d.; 3 Chapman's salve, 7½d.; 2 Church's cough drops, 2s. 9d.; 1 Church's cough drops, 4s. 6d.; 3 Chapman's ointment, 1s. 1½d.; 6 Chapman's pills, 1s. 1½d.; 6 Bainbridge's oils, 1s. 1½d.; 2 Bainbridge's oils, 2s. 9d.; 12 Bembridge's vital pills, 1s. 1½d.; 2 Abernethy's pills, 4s. 6d.; 9 Seul's drops, 1s. 1½d.; 1 Paris cough linctus, 1s. 1½d.; 3 Jesuits' drops, 2s. 9d.; 2 amboyna mouth powder; 6 Napier's pills, 1s. 1½d.; 1 Newton's tooth powder, 2s. 9d.; 1 Bembridge's pills, 2s. 9d.; 4 Hutchinson's pills, 1s. 1½d.; 2 Gall's pills, 1s. 1½d.; 2 Norton's extract peppermint, 1s. 1½d.; 3 Notly's pills, 1s. 1½d.; 2 Percy's pills, 1s. 1½d.; 3 family pills, 1s. 1½d.; 6 Franklin's pills, 1s. 1½d.; 2 Harrison's pills, 1s. 1½d.; 3 Carrington's pills, 1s. 1½d.; 2 Watts's pills, 1s. 1½d.; 1 Dixon's pills, 2s. 9d.; 1 Smith's pills, 1s. 1½d.; 1 Cundell's balsam of honey, 1s. 1½d.; 1 Parker's Grecian hair compound. 3s. 6d.; 2 Sandwell's plaisters, 1s. 1½d. All patents; 30 off, or offer for lot. Will sell cheap. C. Potts, Ilkeston.

Druggists' sundriesman's stock of the following, all new goods, to be sold cheap. 2,500 stoppered shop rounds, all sizes; blue syrup bottles, with plug stoppers, patent oil bottles, with glass and tin caps; essential oil bottles, with glass caps, all the above with gold labels; 220 20, 30 and 40 oz. engraved acid bottles, ground glass measures, 480, all sizes; glass and composition funnels; glass and composition mortars and pestles; 800 blue, olive, white earthenware shop jars, all sizes; 6 handsome show jars, as fig. D Maw's, 13 in. high, elegantly labelled inside; isinglass, gelatine, hair combs, tooth brushes, violet powder, powder puffs, with gilt glass covers, price 55s.; 6 ditto, 14 in. high, elegantly labelled inside; sponge bags, toilet soaps, isinglass, gelatine, arrowroot, powder puffs, price 60s.; 6 ditto, very elaborate labels inside; isinglass, fuller's earth, isinglass, violet powder, worm cakes, powder puffs, tooth brushes, 65s.; 6 ditto, 10 in. high, elegantly labelled inside; gelatine, isinglass, Turkey sponge, violet powder, powder puffs, price 45s.; 12 ditto, 10 inches high, elegantly labelled inside; gelatine, isinglass, powder puffs, fuller's earth, tooth brushes, nail brushes, medical wool, enema syringes, I. R. teats, I. R. tubing, court plasters, violet powder, price 90s.; also 7 dozen others to be sold separately, with elegant labels inside; 6 handsome show jars, with gilt glass covers and elegant labels inside, as fig. A, Maw's, 14 in. high; bath gloves, violet powder, powder puffs, hair combs, Turkey sponge, medical wool, price 55s.; 86 ditto, elegantly labelled inside, 10½ in. high, at 6s. 6d. each; 120 1, 2, and 3-lb. jujube jars, as fig. 2, Maw's, with handsome labels; pair specie jars, with single scroll, gold labels inside, and gilt glass covers, 18 in. high; cream tartar and magnesia, price 55s.; 1 ditto, labelled P. jalap, 16 in. high, 25s.; 1 ditto, 19 in. high, labelled scammony, price 28s.; pair ditto, 20½ in. high, labelled rhubarb and Peruv. bark, price 70s.; 1 ditto, 26 in. high, royal arms, 65s.; pair ditto, 30 in. high, royal and Prince Wales's arms, 8l. 10s.; 1 specie jar, with gilt glass cover, 19 in. high, elegantly labelled inside Turkey sponge, 25s. Lloyd Rayner, 333 Kingsland Road, London, N.

A No. 4 soda water machine, by Tyler & Sons, with water and pressure gauges; 6 sets leathers and rubbers; cork squeezer, set of valves, generator cap and screw, glazed connector, syrup measuring tap, one bottling machine, about 30 gross corks, 28 lbs. wire, 3 cases sulphuric acid, a keg of bicarbonate soda, sundry bottles of fruit essences, about 8 gross new soda-water bottles in crates, and one ton prepared whiting in 6 casks. The above machines have never been used. To be sold in one lot. A bargain. Can be seen at R. H. Williams's Machinery Depôts South Bermondsey Railway Station, London,

Entire fittings of five modern chemist's shops equal to new, consisting of window enclosures, counters, counter cases, gold-labelled shop drawers, lockers, wall cases, shelving, gold-labelled shop bottles, jars, &c., prices 40*l.*, 45*l.*, 60*l.*, 75*l.*, 90*l.*; 18 nests mahogany-fronted gold-labelled shop drawers, all sizes; 13 mahogany wall cases, with and without cupboards, under, all sizes; 16 mahogany top counters, with and without drawers, all sizes; mahogany label chest, as 26 Maw's; quantity dispensing screens; upright counter cases, with and without desks; mahogany desks, with and without screens round; bent and flat counter cases; tooth-brush case, as Maw's 72; quantity pear-shaped carboys, all sizes; gold-labelled shop bottles and jars, counter scales, tincture presses, pill machines, and every description of utensils and fittings, required by the trade. Lloyd Rayner, 333 Kingsland Road, London, N.

Modern fittings of an entire shop, now standing, in Nottingham, comprising four 3-gall. globes; 110 drawers; 11-feet mahogany moulded-top counter; 3½ doz. 40-gall., 6 doz. 20-gall., 4 doz. 8-gall., 2 doz. 4-gall. rounds, all newly labelled; twenty-four 3-lb. blue jars; twelve 8-gall. blue jars; 6 patent oil bottles; 2 good upright counter glass cases, glass tablets, and glass shelves, with cut edges; 2 windows, nicely fitted; shelves; cornice; small wall case; 2 label drawers; till, paper, and cork drawer; 10 syrups; 3 small jars, with gilt glass tops; 1 pair 2 lb. avoirdupois, agate centre, brass scales; 1 pair apothecary's stand scales; 2 pair scales for heavy weights; 2 step ladders; warehouse shelving and canisters; twine box; pill machine; No. 12 and 6 Wedgwood mortars; iron mortars; glass measures; palette knives; horn scraps; the whole as they stand for 47*l.* 12-foot entire fitting for one side of a shop—drawers, cupboards, shelves, and lockers, and cornice, for 7*l.* (glass labels and knobs); 8-ft. pine painted counter, 27*s.* 6*d.*; 6-ft. counter, painted and grained, mahogany top, 25*s.*, if re-polished, 30*s.*; mahogany glass case, flat, 66 by 17, 20*s.*; 1 upright case and desk, mahogany, 47*s.* 6*d.*; cases, 18 by 7, with divisions, new, 7*s.* 6*d.*; carved, stained, and polished case, 48 by 16, 15*s.*; ebonised plate-glass case, 45 by 23, 70*s.*; wall case, 7 ft. long, 8 ft. high, 125*s.*; brush case, with tablet, 25*s.*; plate-glass case, ebonised, with velvet-lined trays, new, 54 by 22, 84*s.*; 52 by 20 flat case, 17*s.* 6*d.*; mahogany steps, 34 in. wide, 22 in. high, 17*s.* 6*d.*; mahogany case and carved pine desk, 28 in. high, 18 in. wide, 21*s.* 6*d.*; sign (glass) "Chemist and Druggist," 32*s.* 6*d.* (in frame, ready to put up); 3 handsome glass tablets, in gilt frames, suitable for shop window, 22*s.* 6*d.* (the three), 8½ ft. by 7 in.; mahogany glass case, 65 by 27 (upright), 40*s.*; splendid case, nearly new, 6 ft. long, 32 in. high, forms a handsome dispensing screen, with arched tablet in centre, mirror and marble slab, plate glass shelves, price 145*s.*; 6-hole cigar cases, with tablets, 21*s.* each; 12-ft. pine wall case, one door case, with tablet on top, to go before a desk, 24 by 30, 32*s.* 6*d.*; 3-ft. bent glass case, mahogany, 15 in. wide, 35*s.*; upright dispensing screen, 45 in. high by 54 in. long, 75*s.*; a large assortment of all kinds. R. Tomlinson, 15 St. Paul's Square, Birmingham.

FORMULÆ.

Compounds by which a ship was cleared of 581 rats, 10*s.* 6*d.*; "Scarlet Wash" renders all kinds of scarlet uniforms bright and clean, 3*s.* 6*d.* Walker, 13 Aimfield Row, Dundee.

Two prescriptions, specifics for venereal and debility, original, uncommon experience has proved them quick, infallible, permanent, price 5*s.*, or singly 3*s.*, full directions. 32/146.

Furniture paste, very superior, cleans and puts a brilliant gloss on polished or other furniture, &c., 2*s.* 6*d.*; baking powder (original), 2*s.* 6*d.* The excellence of these preparations secures for them a large sale, profits good, reference, or sample post free on application. H. Hare, 81 South Street, Goole.

To enterprising Chemists.—Offers wanted. The original recipe for Eau de Mélisse des Carmes, balm water of the Carmelite friars, as taken from Bertrand and Cardelli; also 12 receipes for savonnettes or wash balls, marbled, figured, Greek, Ambergris, Venice, Marseilles, chemical, &c. Andrew Bell, 39 Jamieson Street, Arbroath.

How to solidify Glycerine, Cherry Tooth Paste (never ferments), Skin Beautifier or Haloderma, Balsam of Elder Flowers, Brilliantine (inseparable), Fragrant Foaming Dentifrice (similar to Floriline), Petroleum Pomade, Milk of Roses, Restorative Cream (prevents hair becoming grey), Marking Ink (red or black), Chemical Brass Paste, Cement for China (equal to Coaguline), Magic Neuralgic Drops (never-failing remedy), Chemical Food (simple and improved formula), Pill Coating (new method), Chilblain Liniment, Aromatic Quinine and Iron Tonic, Liquor Opii Sedativus, Liquor Sennæ Compositus, French Polish Reviver, Composition for cleaning Harness, White Rose, Moss Rose, Jockey Club, Stephanotis, Spring Flowers, Wood Violets, Ess. Bouquet, Ess. Patebouli, Ihlang Ihlang, Millefleurs, Mignonette, West End Bouquet, Frangipanni, Victoria Bouquet, New Mown Hay, Exeter Essence, Toilet and Aromatic Vinegars. The perfumery and toilet articles are as prepared by a wholesale West End firm; the others are equally good, inexpensive to prepare, and command ready sale; price 5*s.* each, six for one guinea. Address, Mr. Willie, 33 Theberton Street, Islington, N.

WANTED.

Chemical balance, cheap. Harrop, Middleton, Manchester.

Four 8-gallon show carboys, pear shape. Gerring, Witney.

Small soda-water plant. State maker and lowest price. 4/148.

Watson, Chemist, Rochester, wants good cheap self-acting fountain.

Price of machine to cut sweets. Care of Charles Wild, Sydenham, Tetsworth.

A lever sheep-dipping apparatus. Charles Grayson, Swineshead, near Spalding.

Dispensers' Vade-Mecum. "Assistant," 129 Dulwich Road, Herne Hill, S.E.

Pereira's "Selecta," and Bentley's "Botany." E., 206 Burrage Road, Plumstead.

Attfield's "Chemistry," late edition. Padwick. Redhill.

Second-hand—Acton's "Diseases of the Organs of Generation," cheap. 39/140.

The *Lancet*, posted free Thursday after publication. Say price, J. Dove, Chemist, Sherburn, South Milford.

A two-quart tincture press; outside lamp. Particulars to Doubleday, Southwell Road, Nottingham.

"Squire's Companion," last edition, for Attfield, fourth edition, and Roscoe's "Chemistry." Hodgson, 128 Prescot Road, Liverpool.

The Chemist and Druggist posted on the 20th of every month. State terms to H. Knight, Chemist, Whitstable.

Attfield's "Chemistry," Bentley's "Botany," Royle's "Materia Medica," "Selecta e Prescriptis." E. Holifield, Faringdon, Berks.

Dentists' lathe, impression trays, tools, &c. Address, A. P. S., 13 Masbro' Bridge, Rotherham.

Second-hand—"Lancet," "Practitioner," "New Remedies," "Boston Journal," "Druggists Circular." Farie, Bridge-of-Allan.

A dentist's show-case, suitable for hanging on door-post outside. State price and particulars to A. P. Barnard, Chemist and Dentist, Columbia Road, Shoreditch.

Apparatus for chemical experiments; also good toothbrush case. Write stating price and particulars, George Lascelles, Howden, Yorkshire.

Invalid chair, with shifting back and movable right arm, or one which might easily be altered. State price wanted to "Cadeira," care of Newbery & Sons, 37 Newgate Street

"Selecta e Prescriptis," Cooke's "Structural Botany," Squire's "Companion to British Pharmacopœia," latest editions. Delta, 344 High Street, Lincoln.

The whole or part fixtures and fittings of chemist's or surgeon's, with or without stock. Thomson, 1 Nile Terrace, Trafalgar Road, Old Kent Road, S.E.

A dental lathe, as Ash's No. 4 or 5; also nitrous oxide apparatus and show case in exchange for microscopes, micro objects, or for cash. "Dentist," 45 Kensington High Street, W.

Good sized wall glass case for warehouse, suitable for storing petroleum; lamps not necessary, but if with drawers not objected to; good condition; cheap for cash; eight 30-oz. oil bottles. Address, with particulars, G. Briggs, 11 Bridge Street, Goole.

ADDRESSES WANTED.

Address of Mrs. Evans, housekeeper or nurse. Takes morphia. Above will greatly oblige J. H. Bolton, Chemist, 251 Gray's Inn Road.

Wanted at once the address of Henry Fitzgerald, Chemist, formerly of Bath. Forward to Henry Matthews, Wholesale Druggist, Bristol

PATENTS

[The following list has been compiled expressly for THE CHEMIST AND DRUGGIST by G. F. Redfern, Patent Agent, successor to L. de Fontainemoreau & Co., 4 South Street, Finsbury, London; and at Paris and Brussels.]

Provisional Protection for six months has been granted for the following :—

Agglomerating Chemical Substances.—No. 4888.—S. Pitt, of Sutton, Surrey. Improvement in the mode of agglomerating chemical substances. Dated December 24, 1877.

Anhydrite of Sulphuric Acid.—No. 256.—W. Majert, of Bahnhof Schlebusch, Germany. Improvements in the manufacture of the anhydrite of sulphuric acid, and of the concentrated sulphuric acid. Dated January 19, 1878.

Bottle Stoppers.—No. 77.—A. M. Clark, of London. Improvements in the manufacture of wooden bottle stoppers and bungs. Dated January 5, 1878.

Bottle Stoppers.—No. 29.—C. Henderson, of 20 Cockspur Street, London, and C. H. Coghlan, of 57 Margaret Street, Cavendish Square, London. Improvements in securing corks or stoppers in bottles or other vessels. Dated January 2. 1878.

Colouring Matters.—No. 113.—H. Knight, of Ryde, Hampshire. A new or improved manufacture of paints or colouring matters. Dated January 9, 1878.

Decanting Fluids.—No. 250.—A. Bernstein, of Friedenau, near Berlin, Germany, physician. Improvements in apparatus for drawing off or decanting fluids. Dated January 19, 1878.

Developing Bromine.—No. 4832.—H. Simon, of 7, Peter's Square, Manchester. Improvements in the process and apparatus for developing bromine. Dated December 19, 1877.

Drying and Purifying Air.—No. 4863.—J. Sturgeon, of Crosby, near Liverpool, engineer. Improvements in and appertaining to machinery and apparatus for cooling, drying, and purifying atmospheric air for refrigerating purposes. Dated December 21, 1877.

Extracting Corks.—No. 28.—G. R. F. Sinibaldi, of Leamington, Park Villas, Acton, London. An improved implement for extracting corks from bottles. Dated January 2, 1878.

Extracting by Steam Pressure.—No. 264.—R. U. Etzensberger, of the Midland Hotel, St. Pancras, London. Improvements in apparatus for making infusions or extracts from substances by steam-pressure. Dated January 21, 1877.

Filters.—No. 4637.—F. T. Bond, of Gloucester, Doctor of Medicine, Improvements in filters. Dated December 7, 1877.

Filter Presses.—No. 202.—J. C. R. Okes, of Maida Vale, Marylebone, London, and H. Robinson, of Westminster Chambers, Victoria Street, Westminster, London. Improvements in filter presses. Dated January 16, 1878.

Filtering Water.—No. 195.—F. H. Atkins, of 62 Fleet Street, London, civil engineer. Improvements in preparing materials for filtering water and other fluids. Dated January 15, 1878.

Food for Animals.—No. 4921.—P. W. Barr, of Liverpool. Improvements in medicated and other food for dogs and other animals. Dated December 28, 1877.

Glass Bottles, Jars, &c.—No. 4660.—E. Breffit, of London, and J. Edwards, of Castleford, Yorkshire. Improvements in the manufacture of glass bottles, jars and other receptacles, and in the means or apparatus employed therein, and for stoppering bottles for aërated or other liquids. Dated December 8, 1877.

Nitro-Glycerine.—No. 304.—T. T. Jones, of Basinghall Street, London, merchant. Improvements in the manufacture of nitro-glycerine. Dated January 23, 1877.

Orthopœdic Carriage Bedstead.—No. 4915.—G. L. Miller, of 13 Cambridge Terrace, Pimlico, London, tin-plate worker. An orthopœdic carriage bedstead and relative mechanical appliances for use in the treatment of hip-disease and other orthopœdic ailments. Dated December 28th, 1878.

Preventing Sea Sickness.—No. 4938.—H. J. Haddan, of London. Improvements in belts and attachments for preventing sea-sickness. Dated December 31, 1877.

Purification of Saccharate of Lime.—No. 4672.—J. H. Johnson, of London. Improvements in the purification and treatment of saccharate of lime, and in the application of the products resulting therefrom. Dated December 8, 1877.

Purifying Opium.—No. 4765.—J. W. Swan and B. S. Proctor, chemists, both of the Borough, Newcastle-on-Tyne. A process for the purification of opium. Dated December 14, 1877.

Purifying Gas.—No. 230.—R. W. Wallace, of 60 Mark Lane, London, and G. Christopher, of Clapham, London, consulting chemist. Improvements in the purification of gas and the production of bye-products therefrom. Dated January 17, 1878.

Refrigerating.—No. 108.—E. Furness, of 74 Fleet Street, London, engineer. Improvements in apparatus for refrigerating. Dated January 8, 1878.

Refrigerating.—No. 117.—D. Tallerman, merchant, of Cannon Street, London, E. A. Gruning, of Gresham House, Old Broad Street, London, architect, A. D. Dawnay, of Queen Street, London, civil engineer. Improved apparatus applicable to the refrigerating, ventilating, or cooling of receptacles for meat and other perishable foods. Dated January 9, 1878.

Refrigerating Liquids.—No. 4857.—W. Young and A. Neilson, both of Clippens, Renfrewshire, North Britain. Improvements in refrigerating liquids and in the means employed therefor, also in apparatus for the subsequent treatment of the refrigerated liquids. Dated December 21, 1877.

Respirator.—No. 4362.—C. B. Ball, of Blaenavon, Pontypool, Monmouthshire, Doctor of Medicine. An improved apparatus or respirator to enable persons to breathe in an impure atmosphere. Dated November 21, 1877.

Soda and Potash.—No. 133.—W. Weldon, of Rede Hall, Burstow, Surrey. An improvement in the manufacture of soda and potash by the Leblanc process. Dated January 11, 1878.

Soda and Potash.—No. 4880.—W. Weldon, of Rede Hall, Burstow, Surrey. An improvement in the manufacture of soda and potash by the Leblanc process. Dated December 24, 1877.

Sulphuric Acid.—No. 186.—R. Messel, of Silvertown, Victoria Docks, Essex, chemist. Improvements in the production of sulphuric acid. Dated January 15, 1878.

Surgical Trusses.—No. 52.—V. W. Jones, of 1 Hackins Hey, Liverpool. Improvements in trusses for surgical purposes. Dated January 4, 1878.

Treating Pyroxylin.—No. 4771.—F. A. Zimmermann, of 21 Mincing Lane, London. Improvements in the treatment of pyroxylin for pharmaceutical, photographic, and other purposes. Dated December 15, 1877.

Treating Sewage.—No. 12.—H. Robinson and J. C. Mellis, both of Westminster Chambers, Victoria Street, London, engineers. Improvements in the treatment of sewage and impure waters. Dated January 1, 1878.

Washing Bottles, &c.—No. 31.—W. Thompson, of Clare Hall, Raheny, Dublin. Improvements in apparatus for washing bottles and other receptacles. Dated January 2, 1878.

Letters Patent have been issued for the following :—

Alum.—No. 2612.—P. and F. M. Spence, both of Manchester, manufacturing chemists. Improvements in the manufacture of alum. Dated July 6, 1877.

Alum, &c.—No. 2579.—P. Spence and F. M. Spence, both of Manchester, manufacturing chemists. Improvements in the manufacture of alum and certain alumino-ferric compounds. Dated July 4, 1877.

Animal Foods.—No. 3087.—C. Morfit, of Baltimore, Maryland, United States, consulting chemist. Improvements in the manufacture of vegetable and animal food preparations. Dated August 14, 1877.

Bicarbonate of Ammonia and Soda.—No. 4635.—A. M. Clarke, of London. Improvements in the manufacture of bicarbonate of ammonia and soda. Dated December 6, 1877.

Barrel Stoppers.—No. 3672.—E. W. Hammond Brewer and J. Wilkinson, engineer, both of Bradford, Yorkshire. Improvements in stoppers, taps, valves, and vents for beer, wine, and other barrels. Dated October 2, 1877.

Caustic Alkalies.—No. 3082.—W. R. Lake, of London. Improvements in the manufacture of caustic alkalies and their carbonates and chlorine and various sub-products. Dated August 13, 1877.

Cask Stand.—No. 3931.—J. Swindells, of Stockport, Cheshire. An improved stand for casks or barrels. Dated October 24, 1877.

Corking Bottles, &c.—No. 3902.—A. MacDonell, of Newry, Ireland, civil engineer. Improvements in machinery or apparatus for filling and corking bottles and other like receptacles. Dated October 22, 1877.

Chromates.—No. 2594.—H. McCulloch Drummond, of Irvine, Ayrshire, North Britain, and W. J. A. Donald, of Glasgow, North Britain. Improvements in the manufacture of chromates. Dated July 5, 1877.

Distillation.—No. 2926.—J. Twentyman, distiller, of Glentarras Distillery, Langholm, North Britain. Improvements in distillation and apparatus used in the process. Dated July 31, 1877.

Dental Appliances.—No. 2744.—R. Marston, of Leicester, dentist. Improvements in dental appliances. Dated July 18, 1877.

Filter Presses.—No. 3252.—J. Derbyshire, of Marsh Street, Longton, Staffordshire, engineer. Improvements in filter presses. Dated August 27, 1877.

Filling Bottles.—No. 2557.—W. W. Horner and G. Barker, of Globe Works, Manchester. Improvements in apparatus for filling bottles with aërated and other liquids. Dated July 4, 1877.

Filtering Liquids.—No. 3019.—F. A. Bonnefin, of 2 Liverpool Street, King's Cross, London. Improvements in apparatus for filtering liquids and separating solid matters therefrom. Dated August 8, 1877.

Flask and Syringe.—No. 2674.—W. M. Brown, of London. An improved flask and syringe combined. Dated July 11, 1877.

Oil Presses.—No. 2610.—J. Pearson, of Rock Villa Oil Mill, Glasgow. Improvements in oil-presses. Dated July 6, 1877.

Pad for Trusses.—No. 2607.—W. E. Gedge, of London. A new and improved pad for trusses, adaptable to any spring waistband. Dated July 6, 1877.

Purifying Liquids.—No. 3541.—E. Johnson, of 3 Eliot Cottages, Blackheath, Kent, sanitary engineer, and J. Robey, of 2 South Crescent, Greenwich, Kent, sugar refiner. Improvements in the manufacture of a filtering medium for the purification of water and other liquids. Dated September 20, 1877.

Preserving Animal Substances, &c.—No. 3000.—J. H. Johnson, of London. Improvements in preserving animal, alimentary, and other substances. Dated August 7, 1877.

Purifying Ozone.—No. 2697.—W. R. Lake, of London. Improvements in apparatus for purifying ozone. Dated July 12, 1877.

Preserving Meat, &c.—No. 2882.—W. J. Bouser, of Highbury New Park, London. Improvements in the means of preserving, in a fresh and sound state, meat, poultry, and fish. Dated July 28, 1877.

Red Colour.—No. 2602.—W. R. Lake, of London. An improved manufacture of red colour. Dated July 5, 1877.

Stoppering Bottles.—No. 2930.—W. R. Lake, of London. Improved apparatus for stoppering bottles. Dated July 31, 1877.

As far as general export trade is concerned, the year opens badly. January has not maintained the improvement which was beginning to manifest itself in the latter part of 1877, and there is but too much reason to anticipate that we have not even yet reached the lowest depth of our commercial depression.

The critical position of political affairs must have a paralyzing effect on most branches of commerce, and so far the present month has been the most anxious we have yet passed through.

A melancholy sign of the times has been some animated speculation in saltpetre during the past week, and cargoes to arrive have been bought freely at an advance of 6*d.*, 9*d.*, and sometimes 1*s.* per cwt. We sincerely wish bad luck to the purchasers.

The exports of alkali and chemical products generally have improved since the beginning of the year. The production is, however, still in excess of market requirements, and prices have not kept up to former levels on the average. Some sales to clear have added to the weakness, and consequently alkalis show a distinct fall for the month. Sulphate of ammonia and the other ammonia salts have made a slight advance. Cream of tartar has declined from 100*s.* to 98*s.*, and was not readily bought at the latter price, but it is now rather firmer. Tartaric acid has not varied, but citric is dull at the reduced quotation of 2*s.* 3½*d.*, and sulphate of copper is quoted at 19*s.* 9*d.* instead of 20*s.*, without attracting much demand. Arsenic has also been reduced. A speculative demand has sprung up for saltpetre to arrive, but the price of refined has not yet been affected. Bleaching powder sells steadily at 6*s.* 3*d.* in London, and makers are pretty well stocked with orders. Mercurials, iodine and quinine remain at last quotations with fair business doing. Iodide of potassium is sold at a trifle lower.

In the drug market the transactions have not been extensive. Some good opium has been on the market and bought at very moderate rates. There is no faith in the reports of scarcity, and the time has almost passed for these to affect the market for this season. There has been some excitement in reference to cubebs, which was run up last month from 27*s.* to 40*s.* It is stated that no supply is forthcoming from Singapore, and there is consequently a scramble for the existing stocks, which are not large. Otto of roses is quoted at the prohibitory price of 2 guineas per ounce, which is considerably over 1*d.* per minim. Castor oil is distinctly firmer, firsts selling at 5¾*d.* Italian was bought in at 6*d.* Cinchona barks have not been in free demand, but no material difference in prices is to be noted. Gum benjamin of best quality is held for extreme prices, 70*l.* per cwt. being declined for some at last sales. Cardamoms are also dearer for best qualities, though ordinary sorts are not affected. Ergot of rye sold last week at 11*d.* and 11½*d.* Balsam of copaiba has recovered a little from the very low price of last month, but both Tolu and Peru balsams have fallen.

In oils, the advance in olive anticipated by us has been realised. If the Eastern War should come to an end, this advance would probably be more marked, as considerable quantities of the present stock would go to the Black Sea. Linseed and rape oils are rather firmer than they have been, but they are still a trifle cheaper than a month ago. American spirits of turpentine have advanced steadily, and are now quoted at 25*s.* 6*d.* The fluctuations of petroleum have been confined within the narrow limits of from 9½*d.* to 10*d.*, leaving off at about the strongest.

Subjoined is a statement of the stocks of the chief drugs in the port of London on January 31, 1878.

	January 31 Stocks		January 31 Imports		January 31 Deliveries	
	1878	1877	1878	1877	1878	1877
Aloes……cs	2,207	2,466	381	269	214	167
,, ……kegs	14	25	—	—	—	—
,, ……gourds	2,100	1,560	25	17	234	116
Aniseed, Star ……chts	979	1,615	120	—	102	43
Arrowroot ……cks	12,219	2,177	87	331	1,179	960
,, ……bxs & tins	6,284	4,952	352	1,304	642	536
Balsam ……cks, &c.	166	461	—	121	22	16
Bark, Medicinal ..cks, &c.	939	170	241	73	471	54
,, ……srns, &c.	12,457	8,799	4,479	1,736	2,820	1,655
,, Tanners' ……tns	3,824	4,342	809	529	999	925
Borax ……pkgs	1,021	1,197	—	85	12	290
Bees' Wax……bls & srns	497	446	1	45	58	13
,, ……cks & cs	1,438	1,151	172	381	105	200
,, ……cakes	9	74	100	40	99	85
Japan vegetable ..pkgs	6,199	7,055	70	3,020	185	583
Camphor……pkgs	4.033	7,764	—	2,514	472	530
Cardamoms……chts	506	787	25	3	90	47
Cocculus Indicus bgs, &c.	2,413	2,387	—	—	23	2
Colombo root……pkgs	586	771	24	75	55	20
Cream of Tartar ……cks	101	116	19	59	30	36
Cubebs ……bgs	275	280	—	—	19	—
Dragonsblood……chts	135	59	6	—	9	1
Galls, E.I. ……cks & cs	2,432	1,045	—	526	730	962
Mediterranean ……sks	831	640	237	336	20	153
Gum—						
Ammoniac ……pkgs	536	496	58	8	5	—
Animi & Copal …… ,,	8,449	4,083	431	173	452	924
Arabic, Barbary …… ,,	1,068	707	208	141	161	305
Turkey …… ,,	575	490	163	100	57	82
E.I.…… ,,	2,506	1,608	750	380	416	270
Asafœtida …… ,,	248	352	—	—	54	—
Benjamin …… ,,	1,093	607	180	84	51	74
Damar …… ,,	920	1,940	9	211	182	416
Galbanum…… ,,	35	31	—	—	—	1
Gamboge …… ,,	160	219	6	45	12	35
Guaiacum …… ,,	36	21	—	13	1	1
Kino …… ,,	13	18	1	—	—	—
Kowrie ……tns	1,073	912	266	285	183	181
Mastic ……pkgs	150	110	27	4	1	4
Myrrh, E.I. …… ,,	261	264	8	28	7	19
Olibanum …… ,,	3,899	2,457	1,107	1,145	165	142
Sandarac …… ,,	575	529	221	136	124	123
Senegal ……tns	12	112	2	—	—	1
Tragacanth ……pkgs	280	191	125	156	42	26
Ipecacuanha….cks & bgs	271	141	11	16	52	29
Jalap ……bls	508	647	—	10	29	13
Nux Vomica ……pkgs	1,220	1,510	—	6	27	7
Oil—						
Castor ……cks	—	—	—	—	—	—
,, ……cs	2,710	6,097	2	2,281	872	1,306
,, ..dpprs & tins	—	—	—	—	—	—
Palm ……tns	601	213	167	56	181	353
Cocoanut …… ,,	2,747	3,767	618	1,635	627	775
Olive ……cks, &c.	973	930	163	147	489	294
Aniseed ……cs	190	197	—	—	47	22
Cassia …… ,,	703	434	—	56	30	24
Opium ……chts, &c.	1,832	1,220	—	—	—	—
Rhubarb ……chts	1,061	883	133	23	90	89
Saltpetre, Pt. ……tns	4,428	4,770	1,062	657	838	1,248
Sarsaparilla ……bls	1,323	1,197	210	403	109	121
Senna ……bls, &c.	3,390	2,685	274	370	124	216
Shellac……cs, &c.	40,647	30,433	4,053	5,663	2,665	2,129
Terra Japnca, Gambier tns	2,270	621	1,577	629	1,086	1,051
Cutch …… ,,	2,532	2,662	352	103	108	161
Turmeric …… ,,	1,216	877	415	434	140	190

Monthly Price Current.

The prices quoted in the following list are those actually obtained in Mincing Lane for articles sold in bulk. Our Retail Subscribers must not expect to purchase at these market prices, but they may draw from them useful conclusions respecting the prices at which articles are offered by the Wholesale Firms.

CHEMICALS.

	1878.					1877.				
	s.	d.		s.	d.	s.	d.		s.	d.
ACIDS—										
Acetic ... per lb.	0	2¾	to	0	0	0	3½	to	0	0
Citric ... ,,	2	3¼	..	2	3½	2	8	..	0	0
Hydrochlor ... per cwt.	5	0	..	7	0	4	0	..	7	0
Nitric ... per lb.	0	4¼	..	0	0	0	4¾	..	0	0
Oxalic ... ,,	0	4¾	..	0	5	0	5	..	0	5¼
Sulphuric ... ,,	0	0¾	..	0	1	0	0¾	..	0	1
Tartaric crystal .. ,,	1	4¼	..	1	5	1	7	..	0	0
powdered ,,	1	4¾	..	1	5	1	7	..	0	0
ANTIMONY ore ... per ton	240	0	..	300	0	240	0	..	300	0
crude .. per cwt.	37	0	..	0	0	26	0	..	38	0
star ... ,,	50	0	..	51	0	55	0	..	56	0
ARSENIC, lump ... ,,	26	0	..	0	0	26	0	..	26	6
powder ... ,,	10	0	..	0	0	9	9	..	10	0
BRIMSTONE, rough ... per ton	110	0	..	115	0	120	0	..	130	0
roll .. per cwt.	9	9	..	10	6	10	0	..	0	0
flour ... ,,	11	6	..	13	6	13	6	..	0	0
IODINE, dry ... per oz.	0	10½	..	0	0	0	5¾	..	0	0
IVORY BLACK, dry .. per cwt.	8	6	..	0	0	8	6	..	0	0
MAGNESIA, calcined .. per lb.	1	10	..	0	0	1	10	..	0	0
MERCURY ... per bottle	145	0	..	0	0	150	0	..	0	0
MINIUM, red ... per cwt.	20	6	..	20	9	23	3	..	0	0
orange .. ,,	33	0	..	0	0	37	0	..	0	0
PRECIPITATE, red . per lb.	3	7	..	0	0	4	1	..	0	0
white ,,	3	6	..	0	0	4	0	..	0	0
PRUSSIAN BLUE .. ,,	0	0	..	0	0	0	0	..	0	0
SALTS—										
Alum ... per ton	135	0	..	140	0	145	0	..	150	0
powder ... ,,	142	6	..	0	0	157	6	..	160	0
Ammonia:										
Carbonate ... per lb.	0	5½	..	0	5¾	0	5	..	0	5¼
Hydrochlorate, crude, white ... per ton	580	0	..	720	0	560	0	..	670	0
British (*see* Sal Am.)										
Sulphate ... per ton	420	0	..	430	0	370	0	..	375	0
Argol, Cape ... per cwt.	75	0	..	95	0	80	0	..	91	0
Red ... ,,	67	0	..	73	0	65	0	..	75	0
Oporto, red. ,,	32	6	..	33	0	33	6	..	34	0
Sicily ... ,,	60	0	..	65	0	60	0	..	62	0
Ashes (*see* Potash and Soda)										
Bleaching powd ... per cwt.	6	3	..	0	0	7	6	..	8	0
Borax, crude ... ,,	27	0	..	38	0	30	0	..	40	0
British refnd. ,,	36	0	..	37	6	40	0	..	42	0
Calomel ... per lb.	3	2	..	3	8	3	8	..	0	0
Copper:										
Sulphate ... per cwt.	19	9	..	0	0	22	0	..	0	0
Copperas, green .. per ton	55	0	..	60	0	55	0	..	65	0
Corrosive Sublimate p. lb.	2	7	..	0	0	3	1	..	0	0
Cr. Tartar, French, p. cwt.	98	0	..	0	0	107	0	..	109	0
brown ,,	0	0	..	0	0	95	0	..	0	0
Epsom Salts ... per cwt.	4	3	..	6	0	5	3	..	7	0
Glauber Salts ... ,,	3	0	..	4	6	4	6	..	5	6
Lime:										
Acetate, white, per cwt.	11	0	..	20	0	11	0	..	20	0
Magnesia: Carbonate ,,	47	6	..	0	0	47	6	..	0	0
Potash:										
Bichromate ... per lb.	0	3¾	..	0	4	0	4½	..	0	4¾
Carbonate:										
Potashes, Canada, 1st sort ... per cwt.	23	0	..	0	0	0	0	..	0	0
Pearlashes, Canada, 1st sort ... per cwt.	30	0	..	0	0	0	0	..	0	0
Chlorate ... per lb.	0	7¼	..	0	0	0	9	..	0	9¼
Prussiate ... ,,	0	10¼	..	0	10¾	0	11½	..	1	0
red ... ,,	1	8	..	1	9	2	1	..	2	2
Tartrate (*see* Argol and Cream of Tartar)										
Potassium:										
Chloride ... per cwt.	0	0	..	0	0	0	0	..	0	0
Iodide ... per lb.	13	0	..	0	0	7	9	..	8	0
Quinine:										
Sulphate, British, in bottles ... per oz.	10	0	..	0	0	11	0	..	0	0
Sulphate, French ,,	9	0	..	0	0	10	0	..	10	3
Sal Acetos ... per lb.	0	7	..	0	0	0	7½	..	0	8
Sal Ammoniac, Brit. cwt.	42	0	..	43	0	44	0	..	45	0
Saltpetre:										
Bengal, 6 per cent. or under ... per cwt.	22	3	..	22	9	20	3	..	21	0
Bengal, over 6 per cent. per cwt.	21	0	..	22	0	19	0	..	20	0
British. refined ,,	25	6	..	27	0	24	0	..	25	6
Soda: Bicarbonate, p. cwt.	9	6	..	9	9	11	9	..	12	0
Carbonate:										
Soda Ash .. per deg.	0	1⅝	..	0	0	0	2	..	0	0
Soda Crystals per ton	70	0	..	0	0	82	6	..	85	0
Hyposulphite, per cwt.	0	0	..	0	0	0	0	..	0	0
Nitrate ... ,,	15	6	..	15	9	12	0	..	0	0
SUGAR OF LEAD, White cwt.	37	6	..	0	0	37	0	..	38	0
Brown, cwt.	27	6	..	0	0	27	0	..	0	0
SULPHUR (*see* Brimstone)										

	1878.					1877.				
	s.	d.		s.	d.	s.	d.		s.	d.
VERDIGRIS ... per lb.	1	1	to	1	5	1	1	to	1	5
VERMILION, English ,,	2	8	..	0	0	3	2	..	0	0
China ,,	2	0	..	2	2	2	9	..	0	0

DRUGS.

	1878.					1877.				
	s.	d.		s.	d.	s.	d.		s.	d.
ALOES, Hepatic ... per cwt.	80	0	..	130	0	70	0	..	160	0
Socotrine .. ,,	85	0	..	200	0	65	0	..	170	0
Cape, good .. ,,	40	0	..	42	0	49	0	..	50	0
Inferior ... ,,	35	0	..	39	0	41	0	..	48	0
Barbadoes .. ,,	40	0	..	160	0	55	0	..	190	0
AMBERGRIS, grey ... oz.	80	0	..	90	0	60	0	..	75	0
BALSAM—										
Canada ... per lb.	0	9	..	1	6	1	1	..	0	0
Capivi ... ,,	1	6	..	1	6¼	1	10	..	2	0
Peru ... ,,	4	3	..	0	0	5	3	..	0	0
Tolu ... ,,	4	0	..	4	3	11	0	..	12	0
BARKS—										
Canella alba ... per cwt.	18	0	..	22	0	20	0	..	24	6
Cascarilla ... ,,	15	6	..	23	0	16	0	..	21	0
Peru, crown & grey per lb.	1	6	..	3	0	1	3	..	3	1
Calisaya, flat ,,	3	6	..	4	6	2	6	..	5	0
,, quill ,,	4	6	..	5	5	2	9	..	5	0
Carthagena ,,	1	8	..	2	4	2	5	..	3	7
Columbian .. ,,	2	0	..	4	6	2	0	..	5	3
E. I. ... ,,	1	2	..	2	8	2	3	..	4	6
,, good & fine ,,	3	0	..	7	0	4	9	..	7	4
Pitayo ... ,,	0	6	..	1	6	0	10	..	2	4
Red ... ,,	3	3	..	5	0	2	0	..	4	6
Buchu Leaves ... ,,	0	2½	..	0	3	0	1	..	1	1
CAMPHOR, China .. per cwt.	80	0	..	0	0	80	0	..	87	6
Japan .. ,,	82	6	..	0	0	90	0	..	0	0
Refin. Eng. per lb.	1	2	..	0	0	1	2½	..	0	0
CANTHARIDES ... ,,	2	0	..	5	0	2	6	..	3	6
CHAMOMILE FLOWERS p. cwt.	50	0	..	200	0	45	0	..	200	0
CASTOREUM ... per lb.	9	0	..	30	0	9	0	..	29	0
DRAGON'S BLOOD, lp. p. cwt.	85	0	..	285	0	140	0	..	260	0
FRUITS AND SEEDS (*see also* Seeds *and* Spices).										
Anise, China Star per cwt.	75	0	..	90	0	90	0	..	105	0
Spanish, &c. ,,	45	0	..	50	0	28	0	..	40	0
Beans, Tonquin ... per lb.	1	9	..	5	0	1	7	..	2	7
Cardamoms, Malabar good ... ,,	4	9	..	6	3	3	9	..	4	2
inferior ... ,,	1	9	..	4	5	0	10	..	3	8
Aleppy ... ,,	2	0	..	5	6	2	0	..	3	9
Madras ... ,,	2	2	..	3	9	1	10	..	3	5
Ceylon ... ,,	3	1	..	4	8	4	6	..	5	0
Cassia Fistula ... per cwt.	80	0	..	89	0	10	0	..	32	0
Castor Seeds ... ,,	0	0	..	0	0	5	0	..	10	6
Cocculus Indicus ,,	8	3	..	10	0	9	0	..	11	0
Colocynth, apple .. per lb.	1	0	..	1	9	0	6	..	0	11
Croton Seeds ... per cwt.	26	0	..	32	6	35	6	..	36	6
Cubebs ... ,,	35	0	..	40	0	28	0	..	29	0
Cummin ... ,,	20	0	..	35	0	18	0	..	33	0
Dividivi ... ,,	13	0	..	16	0	10	0	..	15	0
Fenugreek ... ,,	6	0	..	12	0	9	0	..	12	0
Guinea Grains .. ,,	28	0	..	0	0	20	0	..	0	0
Juniper Berries ,,	6	6	..	9	0	8	0	..	10	0
Nux Vomica ... ,,	9	0	..	14	0	9	0	..	13	0
Tamarinds, East India ,,	12	0	..	19	0	10	0	..	15	6
West India ,,	21	0	..	25	0	10	0	..	15	6
Vanilla, large ... per lb.	20	0	..	27	0	30	0	..	45	0
inferior ,,	15	0	..	19	0	15	0	..	38	0
GINGER, Preserved, per lb.	0	4½	..	0	7	0	5	..	0	6¼
HONEY, Chili ... per cwt.	45	0	..	52	0	40	0	..	47	6
Jamaica ,,	38	0	..	43	0	35	0	..	47	0
Australian ,,	0	0	..	0	0	0	0	..	0	0
IPECACUANHA ... per lb.	4	9	..	5	6	4	8	..	4	10
ISINGLASS, Brazil .. ,,	3	0	..	4	10	2	6	..	4	9
Tongue sort ,,	3	5	..	5	3	3	0	..	5	11
East India ,,	2	0	..	2	1	2	0	..	4	10
West India ,,	4	0	..	4	4	4	0	..	4	7
Russ. long staple	8	0	..	15	0	8	0	..	12	6
,, inferior	0	0	..	0	0	0	0	..	0	0
,, Simovia	1	6	..	3	0	2	0	..	3	3
JALAP, good ... ,,	0	8	..	1	0	0	8	..	0	9½
infer. & stems ,,	0	7	..	0	7½	0	7	..	0	7½
LEMON JUICE ... per degree	0	1	..	0	1¼	0	1	..	0	1½
LIME JUICE ... per gall.	0	0	..	0	0	1	3	..	1	8
LIQUORICE, Spanish per cwt.	34	0	..	39	0	0	0	..	0	0
Liquorice Root ,,	0	0	..	0	0	12	0	..	30	0
MANNA, flaky ... per lb.	3	6	..	4	0	5	6	..	6	0
small ... ,,	1	4	..	1	6	1	6	..	1	9
MUSK, Pod ... per oz.	20	0	..	52	6	15	6	..	50	0
Grain ... ,,	25	0	..	60	0	35	0	..	60	0
OILS (*see also separate list*)										
Almond, expressed per lb.	1	8	..	0	0	1	4	..	0	0
Castor, 1st pale ... ,,	0	5	..	0	0	0	4½	..	0	5¼
second ... ,,	0	4½	..	0	4¾	0	4⅛	..	0	4⅜
Cod Liver ... per gall.	4	0	..	5	0	6	6	..	8	6
Croton ... per oz.	0	2½	..	0	2¾	0	2½	..	0	0
Essential Oils:										
Almond ... per lb.	25	0	..	0	0	20	0	..	0	0⅝
Anise-seed ... ,,	6	9	..	0	0	6	8	..	6	9
Bay ... per cwt.	0	0	..	0	0	65	0	..	70	0
Bergamot ... per lb.	10	0	..	15	0	10	0	..	15	0
Cajeput ... per bottle	3	0	..	3	6	3	0	..	3	6
Caraway ... per lb.	9	0	..	9	3	9	0	..	9	34
Cassia ... ,,	3	0	..	0	0	3	10	..	4	0
Cinnamon ... per oz.	4	6	..	5	6	2	6	..	6	6
Cinnamon-leaf .. ,,	0	1¾	..	0	2½	0	2½	..	0	3
Citronelle ... ,,	0	2½	..	0	3	0	2	..	0	0
Clove ... ,,	8	0	..	0	0	8	9	..	0	0
Juniper ... ,,	0	0	..	0	0	0	0	..	0	0
Lavender ... per lb.	1	8	..	7	0	1	8	..	7	6
Lemon ... ,,	5	0	..	8	6	7	0	..	9	0
Lemongrass ... per oz.	0	2¾	..	0	2⅞	0	2½	..		0

	1878.					1877.				
Essential Oils, *continued*:—	s.	d.		s.	d.	s.	d.		s.	d.
Neroli ....per oz.	3	0	to	6	6	3	0	to	6	6
Nutmeg .... ,,	0	4	..	0	4½	0	6½	..	0	7
Orange..........per lb.	4	3	..	7	0	6	0	..	9	0
Otto of Roses....per oz.	35	0	..	44	0	13	0	..	25	0
Patchouli ...... ,,	1	6	..	3	0	2	0	..	3	6
Peppermint :										
American ....per lb.	10	9	..	12	6	12	9	..	14	6
English ...... ,,	24	0	..	25	0	34	0	..	35	0
Rosemary ...... ,,	2	0	..	2	6	2	0	..	2	6
Sassafras ...... ,,	2	3	..	2	6	2	3	..	2	6
Spearmint ...... ,,	12	0	..	15	0	12	0	..	15	0
Thyme.......... ,,	0	0	..	0	0	0	0	..	0	0
Mace, expressed ..per oz.	0	6	..	0	10	0	6	..	0	10
OPIUM, Turkey ......per lb.	17	0	..	17	6	24	0	..	25	0
inferior ...... ,,	10	0	..	12	0	10	0	..	18	0
QUASSIA (bitter wood) per ton	100	0	..	130	0	100	0	..	140	0
RHUBARB, China, good and fine ....per lb.	2	6	..	3	8	2	6	..	4	5
Mid. to ord....... ,,	0	4	..	1	8	0	8	..	1	4
Dutch Trimmed.. ,,	0	0	..	0	0	0	0	..	0	0
ROOTS—Calumba..per cwt.	25	0	..	50	0	40	0	..	42	6
China .... ,,	25	0	..	30	0	30	0	..	32	0
Chiretta ....per lb.	0	3	..	0	4	0	2½	..	0	3
Galangal ....per cwt.	21	0	..	22	6	20	0	..	26	0
Gentian .... ,,	19	0	..	21	0	23	0	..	24	0
Hellebore .... ,,	0	0	..	0	0	0	0	..	0	0
Orris .... ,,	55	0	..	65	0	26	0	..	75	0
Pellitory .... ,,	70	0	..	76	0	70	0	..	76	0
Pink..............per lb.	0	0	..	0	0	0	0	..	0	0
Rhatany .... ,,	0	4	..	0	8	0	4	..	1	0
Seneka............ ,,	3	6	..	3	9	3	6	..	3	9
Snake .... ,,	0	10	..	1	0	0	6	..	0	7
SAFFRON, Spanish .. ,,	20	0	..	32	0	33	0	..	37	0
SALEP .... per cwt.	240	0	..	300	0	0	0	..	0	0
SARSAPARILLA, Lima per lb.	0	0	..	0	0	0	5	..	0	7
Guayaquil .... ,,	2	2	..	2	6	1	9	..	2	0
Honduras .... ,,	0	11	..	1	5	1	1	..	1	6
Jamaica .... ,,	1	2	..	2	6	1	9	..	2	10
SASSAFRAS ....per cwt.	9	0	..	11	0	0	0	..	0	0
SCAMMONY, Virgin ..per lb.	0	0	..	0	0	24	0	..	30	0
second & ordinary ,,	0	0	..	0	0	6	0	..	22	0
SENNA, Bombay .... ,,	0	1	..	1	5	0	1	..	0	4
Tinnivelly .... ,,	0	1	..	1	0	0	2½	..	2	0
Alexandria........ ,,	0	5	..	1	6	0	5	..	2	5
SPERMACETI, refined ,,	1	4	..	0	0	1	4	..	0	0
American .... ,,	1	3	..	0	0	1	0	..	1	2
SQUILLS .... ,,	0	2½	..	0	3½	0	2	..	0	3

GUMS.

	£	s.		£	s.	£	s.		£	s.
AMMONIACI drop .. per cwt.	1	18	..	2	0	2	2	..	2	10
lump.. ,,	0	15	..	1	15	1	0	..	1	14
ANIMI, fine washed ,,	13	0	..	14	10	11	0	..	12	15
bold scraped ,,	10	10	..	12	15	9	15	..	10	15
sorts ...... ,,	6	5	..	9	10	6	15	..	9	10
dark ...... ,,	5	10	..	6	10	4	0	..	6	10
ARABIC, E.I., fine pale picked .. ,,	2	18	..	3	14	3	3	..	4	0
srts., md. to fin. ,,	2	5	..	2	17/6	2	15	..	3	2
garblings .. ,,	1	5	..	2	0	1	5	..	2	9
TURKEY, pick. gd. to fin. ,,	6	0	..	9	10	6	10	..	10	15
second & inf. ,,	3	0	..	5	15	3	0	..	6	10
in sorts .. ,,	2	10	..	3	16	2	5	..	3	5
Gedda .... ,,	1	14	..	1	19	1	6	..	1	10
BARBARY, white .. ,,	0	0	..	0	0	2	4	..	2	8
brown .. ,,	2	7	..	2	12	2	0	..	2	2/6
AUSTRALIAN...... ,,	1	19	..	2	15	1	15	..	2	7
ASSAFŒTIDA, cm. to fin ,,	0	15	..	2	0	0	18	..	2	11
BENJAMIN, 1st & 2nd ,,	45	0	..	80	0	27	0	..	45	0
Sumatra 1st & 2nd ,,	5	10	..	14	0	6	15	..	12	0
3rd ,,	2	4	..	5	5	3	10	..	5	5
COPAL, Angola red ,,	6	0	..	6	15	6	0	..	6	15
Benguela ,,	4	0	..	5	0	4	0	..	5	0
	s.	d.		s.	d.	s.	d.		s.	d.
Sierra Leone, per lb.	0	6½	..	0	9	0	6	..	0	11
Manilla....per cwt.	18	0	..	27	0	15	0	..	27	0
DAMMAR, pale .... ,,	75	0	..	79	0	66	0	..	68	0
Singapore .... ,,	72	6	..	79	0	65	0	..	67	6
EUPHORBIUM .... ,,	9	0	..	15	0	9	0	..	15	0
GALBANUM .... per lb.	0	9	..	1	3	0	5	..	1	3
GAMBOGE, pckd. pipe per cwt.	180	0	..	290	0	220	0	..	270	0
GUAIACUM ....per lb.	1	8	..	2	5	1	3	..	3	0
KINO..............per cwt.	81	0	..	86	0	40	0	..	50	0
KOWRIE, rough .. ,,	20	0	..	43	0	20	0	..	45	0
scraped sorts ,,	44	0	..	55	0	47	0	..	60	0
MASTIC, picked ....per lb.	4	0	..	5	0	4	0	..	5	0
MYRRH, gd. & fine per cwt.	150	0	..	200	0	160	0	..	220	0
ord. to fair.... ,,	80	0	..	130	0	90	0	..	150	0
OLIBANUM, p. drop ,,	46	0	..	49	0	60	0	..	70	0
amber & ylw. ,,	40	0	..	55	0	55	0	..	60	0
garblings.... ,,	16	0	..	29	0	24	0	..	30	0
SENEGAL .... ,,	60	0	..	65	0	65	0	..	67	6
SANDARAC........ ,,	82	0	..	100	0	95	0	..	110	0
SHELLAC, Orange.. ,,	70	0	..	85	0	95	0	..	150	0
Liver .. ,,	68	0	..	74	0	95	0	..	110	0
THUS .... ,,	20	0	..	21	6	20	0	..	21	6
TRAGACANTH, leaf ,,	240	0	..	400	0	240	0	..	400	0
in sorts ,,	25	0	..	175	0	25	0	..	175	0

OILS.

	£	s.		£	s.	£	s.		£	s.
SEAL, pale ....per tun	33	10	..	34	0	34	10	..	35	0
yellow to tinged ,,	30	10	..	33	0	32	0	..	34	0
brown ...... ,,	29	0	..	30	0	31	0	..	31	10
SPERM............ ,,	75	0	..	0	0	89	0	..	0	0
BODY ...... ,,	0	0	..	0	0	0	0	..	0	0
COD .... ,,	32	10	..	0	0	40	0	..	0	0

	1878.					1877.				
Oils, *continued*:—	£	s.		£	s.	£	s.		£	s.
WHALE, South Sea, pale, per tun	33	0	to	0	0	31	10	to	0	0
yellow ,,	32	0	..	0	0	30	10	..	31	0
brown ,,	29	0	..	30	0	29	0	..	30	0
East India, Fish ,,	25	10	..	0	0	25	0	..	26	0
OLIVE, Galipoli ...per ton	0	0	..	0	0	51	0	..	0	0
Gioja........ ,,	0	0	..	0	0	50	0	..	0	0
Levant .... ,,	51	0	..	0	0	0	0	..	0	0
Mogador .... ,,	59	0	..	0	0	0	0	..	0	0
Spanish .... ,,	51	0	..	0	0	0	0	..	0	0
Sicily ...... ,,	0	0	..	0	0	49	0	..	0	0
COCOANUT, Cochin.. ,,	46	0	..	46	10	41	5	..	41	10
Ceylon ,,	38	15	..	39	0	37	10	..	38	0
Mauritius ,,	39	10	..	40	0	31	0	..	37	0
GROUND NUT AND GINGELLY:										
Bombay	0	0	..	0	0	0	0	..	0	0
Madras	0	0	..	0	0	40	0	..	0	0
PALM, fine................	40	0	..	40	10	40	0	..	0	0
LINSEED	26	10	..	0	0	25	10	..	23	0
RAPESEED, English, pale ..	37	0	..	0	8	40	10	..	0	0
brown	35	0	..	0	0	38	10	..	0	0
Foreign, pale ..	39	10	..	0	0	40	10	..	40	15
brown	0	0	..	0	0	0	0	..	0	0
COTTONSEED	31	10	..	0	0	30	5	..	31	10
LARD	48	0	..	50	0	64	0	..	0	0
TALLOW	30	0	..	54	0	31	0	..	54	0
	s.	d.		s.	d.	s.	d.		s.	d.
TURPENTINE, American, cks.	25	6	..	0	0	30	6	..	0	0
French ,,	0	0	..	0	0	0	0	..	0	0
PETROLEUM, Crude	0	0	..	0	0	0	0	..	0	0
refined, per gall.	0	9⅞	.:	0	10	1	3½	..	0	0
Spirit ,,	0	7½	..	0	8¼	0	11	..	0	0

SEEDS.

	1878.					1877.				
CANARY............per qr.	41	0	..	50	0	60	0	..	70	0
CARAWAY, English per cwt.	43	0	..	45	0	44	0	..	45	0
German, &c....	48	0	..	49	0	0	0	..	0	0
CORIANDER	18	0	..	23	0	12	0	..	21	0
HEMP..............per qr.	0	0	..	0	0	33	6	..	35	0
LINSEED, English ,,	0	0	..	0	0	53	0	..	66	0
Black Sea & Azof	50	0	..	0	0	0	0	..	0	0
Calcutta ,,	49	6	..	0	0	50	6	..	0	0
Bombay ,,	50	0	..	51	0	52	6	..	0	0
St. Petrsbrg. ,,	48	0	..	0	0	52	0	..	0	0
Mustard, brown..per bshl.	0	0	..	0	0	12	0	..	15	0
white.. ,,	13	0	..	16	0	13	0	..	16	0
POPPY, East India, per qr.	48	0	..	0	0	51	0	..	0	0

SPICES.

	1878.					1877.				
CASSIA LIGNEA ..per cwt.	44	0	..	50	0	55	0	..	65	0
Vera .... ,,	22	0	..	45	0	22	0	..	45	0
Buds .... ,,	66	0	..	0	0	75	0	..	80	0
CINNAMON, Ceylon :										7
1st quality ......per lb.	2	2	..	3	6	1	10	..	3	9
2nd do. .... ,,	2	0	..	2	10	1	7	..	2	6
3rd do. .... ,,	1	9	..	2	3	1	5	..	2	0
Tellicherry ...... ,,	2	3	..	2	7	2	9	..	3	5
CLOVES, Penang .... ,,	1	10	..	2	1	2	4	..	2	8
Amboyna .... ,,	1	3½	..	1	6	1	7	..	1	3
Zanzibar.......... ,,	1	2	..	1	3	1	1	..	1	6
GINGER, Jam., fine per cwt.	91	0	..	202	6	91	0	..	202	0
Ord. to good .... ,,	53	0	..	90	0	54	0	..	90	0
African .... ,,	24	0	..	0	0	29	0	..	0	6
Bengal............ ,,	21	6	..	22	6	27	0	..	27	0
Malabar .... ,,	26	0	..	28	0	28	6	..	0	0
Cochin .... ,,	50	0	..	115	0	50	0	..	115	5½
PEPPER, Blk, Malabar, per lb.	0	4½	..	0	5½	0	4½	..	0	4¼
Singapore .... ,,	0	3½	..	0	0	0	4	..	0	4
White Tellicherry ,,	0	10	..	1	4	0	10	..	1	0
Cayenne .... ,,	1	4	..	3	0	2	0	..	3	3
MACE, 1st quality .. ,,	2	2	..	3	3	2	3	..	3	2
2nd and inferior .. ,,	1	0	..	2	1	1	0	..	2	9
NUTMEGS, 78 to 60 to lb. ,,	3	11	..	4	6	3	9	..	4	8
90 to 80 ,, ,,	3	2	..	3	10	3	2	..	3	1
132 to 95 ,, ,,	2	0	..	3	1	2	3	..	3	4¼
PIMENTA	0	4	..	0	4¼	0	4	..	0	

VARIOUS PRODUCTS.

	1878.					1877.				
COCHINEAL—										
Honduras, black ..per lb.	2	2	..	2	6	3	0	..	3	3
,, silver .. ,,	1	11	..	2	1	2	9	..	2	11
,, pasty .. ,,	1	10	..	0	0	2	8	..	0	0
Mexican, black .... ,,	2	0	..	2	1	2	11	..	3	0
,, silver.... ,,	1	11	..	2	0	2	9	..	0	0
Teneriffe, black .. ,,	2	2	..	2	10	3	0	..	3	9
,, silver .. ,,	2	0	..	2	1	2	10	..	2	11
SOAP, Castile......per cwt.	26	0	..	33	0	33	0	..	34	10
SOY, China ...... ,, gall.	2	2	..	0	0	1	8	..	1	9
SPONGE, Turk. fin. pkd pr lb.	0	0	..	0	0	12	0	..	16	0
Fair to good ,,	0	0	..	0	0	4	0	..	11	0
Ordinary .. ,,	0	0	..	0	0	1	0	..	3	0
Bahama.... ,,	0	0	..	0	0	0	6	..	3	0
TERRA JAPONICA—										
Gambier ......per cwt.	18	6	..	18	9	20	0	..	20	3
Free cubes .... ,,	29	6	..	30	6	34	0	..	36	0
Cutch .... ,,	23	0	..	25	0	25	0	..	26	6
WOOD, DYE, Bar ..per ton	£3	10	..	£3	0	£3	5	..	3	7/
Brazil .... ,,	14	0	..	20	0	0	0	..	0	0
Cam.............. ,,	18	0	..	34	0	18	0	..	34	0
Fustic, Cuba ...... ,,	8	0	..	8	10	8	10	..	9	0
Jamaica .... ,,	5	5	..	5	10	5	0	..	5	10
LOGWOOD, Campeachy ,,	8	15	..	9	0	9	10	..	10	0
Honduras ...... ,,	6	10	..	6	15	6	5	..	6	15
St. Domingo .... ,,	5	10	..	6	0	5	10	..	6	10
Jamaica .... ,,	5	0	..	5	10	5	5	..	6	0
LIMA, first pile .... ,,	9	15	..	10	0	8	10	..	9	0
RED SANDERS .... ,	6	0	..	6	10	6	0	..	0	10

NOTES AND QUERIES

Box and Cox.—Can a shop be carried on, say, by Box and Cox, dispensing chemists, supposing only Box is a registered man, and Cox unregistered?—No; Cox, at any rate, would be liable to a penalty for calling himself a "dispensing chemist," which is one of the titles protected by the Pharmacy Act. Perhaps Box and he could be indicted for conspiracy, but we do not bind ourselves to that.

A. B. D.—Is it necessary to put the word "poison" on chlorodyne or morphia and ipecac. lozenges when sold in small quantities? I understand that paregoric lozenges are not required to be labelled "poison."—According to the strict letter of the law, all preparations containing opium or morphia should be labelled poison in addition to the name and address of the seller. Paregoric lozenges are, no doubt, equally liable if it can be proved that they contain any opium. It would be well if special labels were printed for such lozenges, explaining why the word poison was used. Perhaps such exist already.

Dental Student.—Can I lawfully assume the title "surgeon dentist" without passing an examination?—You can at present.—Do you know of any proposed alterations being brought before Parliament relating to dentistry?—A Bill has been introduced by Sir John Lubbock, of which see further particulars in our Editorial Notes.

Mr. William Wilson (Durham) writes: "I shall be glad if you or any of your correspondents will favour me with a formula for silvering brass and alloys, such as teapots, &c. I have tried chloride of silver; also arg. nit. in solution, but they do not stand any length of time without tarnishing." We shall be quite willing to hear the experience of our readers on this subject, but do not think Mr. Wilson will get what he wants. All methods of plating metals without electricity are based on one fact which totally prevents the deposit of a thick coat of silver on the object. That fact is the power of most metals to precipitate silver or mercury from its salts. When chloride of silver is rubbed on a brass teapot, part of the brass is dissolved and an equivalent quantity of silver is deposited in its place. As soon as the whole surface of the brass is covered by a layer of silver, however thin, the action ceases, and no more silver would be deposited if you rubbed till doomsday. In silvering by electricity the same principle is involved, only in this case we so arrange matters that while a metal is being dissolved in one place the silver which should be deposited on it is plating some article elsewhere. So long as any metal remains to be dissolved in the one place, so long will silver be deposited in the other. If Mr. Wilson wishes to make his teapot bright and keep bright he must get it electro-plated.

Phosphorus Pills.—Mr. R. Fortune, of Anstruther, kindly sends us the following:—In "Notes and Queries" for November, under "Salix," you properly discountenance the plan of dissolving phosphorus by rubbing in a mortar with carbon bisulph, but I may be permitted to remind you of the proper way of dealing with these substances, in which I have never experienced firing nor an explosion. It is to add a few drops of ol. caryoph to the carbon bisulph before dissolving the phosphorus. The solution should, of course, be effected in a bottle by gentle shaking, not by friction in a mortar. I think it wise to give the caution that the process is intended for retail traders and small quantities only.

D. H. T.—Please say in your next issue if a pharmacist can compound in his own name, using his name on the labels, &c., but being in the employment of another; or is it necessary that he should rent part of the shop for the purpose? No doubt he can, but he (the pharmacist) becomes in a somewhat dangerous degree the legal proprietor of the business. It is the proprietor who has to be registered, and if it should appear at any time that A. B. (unregistered) was really the proprietor of a business carried on nominally by C. D. (registered), A. B. would be liable for penalties under the Pharmacy Act. The co-operative stores evade the Pharmacy Act by placing a registered man in charge, and letting him appear as the proprietor of the dispensing business.

Bell A. Donna.—We are unable to find the formula by the direction you give us. Please state more definitely, giving page, month, and year.

T. H. N. writes thus:—"Can you kindly give me any information how to prepare Essence of Ginger which will be miscible in water without turbidity. I have recently met with some which remains perfectly clear when mixed with water, and I am anxious to prepare some like it" How this essence is prepared we do not know. We suspect our correspondent has seen the preparation made by Mr. Hay, of Hull. We know that after numerous experiments that gentleman has succeeded in manufacturing an essence of ginger which is free from acridity, and mixes perfectly with water; but the process he uses is unknown to us, and is probably too valuable a secret to be readily parted with. Patient experiments might give our correspondent the information he requires.

Kent's Blister.—*A. B. C.* asks:—"Can anyone give me the formula for Kent's Blister?"

J. T.—(Works on Veterinary Medicine).—"Can you tell me whether 'Every Man his Own Horse Doctor,' in which is embodied 'Blaine's Veterinary Art,' by G. Armatage, published by Warne at 21*s.*, fairly represents modern veterinary practice, and also if it deals with with other animals as well as horses? If not a satisfactory work, or treating only of the latter, do you know of any forthcoming volume comprehending the diseases of all the animals ordinarily falling under the care of the veterinarian?" We have no personal or editorial acquaintance with the work in question. Perhaps some of our readers who combine the art and practice of the veterinary surgeon with their numerous and important functions as chemists and druggists, will give us in a few words their experience of the working value of the book or of some other of the same class.

N. B.—One of the best works on agricultural chemistry is Church's "Laboratory Guide for Agricultural Chemistry," published by Van Voorst at 6*s.* 6*d.* It gives accounts of the analysis of soils, manures, and agricultural products.

Constant Reader.—Sapo Mollis P. B. The information contained in the ordinary works of reference accessible to pharmacists is very indefinite on this subject. The P. B. says it should be made of olive oil and potash. Dr. Pereira said he could never meet with this preparation in England. The directions of the P. B. are as explicit as any we have met with, the only addition or comment being that Sapo Mollis P. B. is made by the same process as other soaps, substituting potash for soda and olive oil for other fats.

W. F.—Can you give me any form for an endorsing ink to use with an endorsing press which will not dry on the pad? The following formulæ have been found useful:—For red, mix aniline red or rubine extract, 2 to 4 drachms; alcohol and water, each 7 oz.; glycerine, 15 oz.; heat and rub together, with a little tannic acid or sumac extract and alum water. For blue, use soluble water blue (aniline) dissolved in a sufficient quantity (about 150 parts) of hot dilute glycerine. Soluble nigrosine may in a similar manner be used for black ink.

A Beginner.—It is quite a mistake to imagine that it is necessary to go a long way to get rare plants or a good knowledge of botany. A Beginner will find river banks, ditches, and marshy places the best localities for plants, and half-an-hour's journey in any direction from London will set him down at good places for a walk. The banks of the Thames at Kew and Richmond are as good a place as any. In Crespigny's "New Flora of London," recently published by Hardwicke and Bogue at 3*s.* 6*d.*, he will find a long list of walks, with the plants he may expect to find there at different times of the year. Bentham's "British Flora," published at 14*s.* 6*d.*, he will find the best work to help him in identifying his specimens.

W. W. T.—The best work on chemistry for a young man to commence studying for the Minor is, perhaps, Attfield's "Chemistry." Be sure to remember that the performance of the experiments there mentioned is of quite as much, if not more, importance than a study of the descriptions which accompany them. We think chemistry the best subject to commence with, for a thorough knowledge of it will be of the greatest assistance in preparing the other subjects on the syllabus.

Tinning Meats.—*G. R.* writes thus:—"You did me the favour last year to get me some information on potted meats, which proved very useful; but still there are two difficulties I cannot surmount, and I do not know of any maker I could visit to see the process. It cannot be any secret, taking into consideration the large number now engaged in the tinned meat provision trade. After my paste is made and soldered down in tins, I place six dozens in a tin tray and just cover them with water, and put in a lump of salt. After it boils, I allow the tins to remain in not less than fifteen minutes, and then take out half-a-dozen at a time, and pierce a small hole in top to let the air out, and as soon as I have pierced the last hole, commence soldering down again, but find in practice it is very difficult, as immediately the hot solder touches the tin the fat from paste rises up through the hole and prevents the solder covering, and before I can get the solder on the air must have entered again. I have tried dropping it on, and just passing the iron over with solder on it; therefore, this part of the process, as far as my knowledge goes, is a complete failure. I want to find out this little thing, and also whether it is necessary to test the tins before sent out to see whether they are air-tight, and, if so, by what method."

We have no practical personal experience in tinning provisions, but descriptions of the process published at various times have left a decided impression on our minds as regards this particular point. Instead of covering the tins with a salt solution and boiling them thus, a better way would be to immerse them so that the *tops* were above the surface of the liquid; then pierce each tin with a minute hole and boil. The steam generated will effectually drive out the air. When the steam is coming out in a decided jet, the tin should be removed from the the liquid, and the moment the rush of steam ceases, solder should be dropped on the hole so as to close it. The air is already driven out, and steam has taken its place. Before the steam is so condensed as to allow the air to enter again, the only point of ingress is stopped with solder. Any fat coming out of the hole could be cleaned off while the tin was still in the bath. By this process the tightness of each tin tests itself, for if air-tight, both top and bottom will be slightly concave. If this is not the case we may be sure there is a leak.

A Canadian.—There is a Pharmacy Act similar to our own in the province of Ontario, but none, we think, in the province of Quebec. You will form some idea of Montreal pharmacy from a letter quoted in our pages this month on that subject.

R. J. P.—The following formula for "composition powder" is given in Dr. Coffin's "Guide to Health:"—Bayberry, 4 oz.; Canadian pine and ginger, of each, 2 oz.; cayenne and cloves, of each, ½ oz. You will find other formulæ in our Notes and Queries of November, 1873.

J. C. R.—Prof. Lister's Ung. Boracis is thus prepared:—

	Parts.
P. acid boracic	1
Cera alba	1
Ol. amygdal	2
Paraffin	2

Melt; stir thoroughly in a heated mortar till the mass begins to thicken.

J. W.—We should think Muspratt's "Chemistry," Ure's "Dictionary," or Watts's "Dictionary of Chemistry," would best answer your requirements; but before purchasing we should advise you to look through a good Chemical library to see which would best meet your wishes.

Oleum Phosphorized Cod Liver Oil.—*A reader* asks for the formula of this. According to Dr. E. R. Squibb, a strong solution is to be prepared by dissolving one part of phosphorus carefully, cooled, dried, and weighed in 100 parts of cod liver oil in a bottle. The bottle is corked and gradually warmed in a water bath until the phosphorus is melted and must then be shaken till a perfect solution is obtained. This must be carefully preserved from contact with the air. One ounce of this solution should be mixed with 27½ ounces of cod liver oil, and the resulting product will contain one twenty-fifth grain of phosphorus per ounce of oil.

J. M.—We are obliged for your communication, which is interesting, but caution is necessary in dealing with such cases. Before we could comment on this one publicly, we should want the facts more definitely before us.

J. L.—One of the best recent works on dyeing, is Mr. Crookes "Handbook of Dyeing and Calico Printing," published by Longmans.